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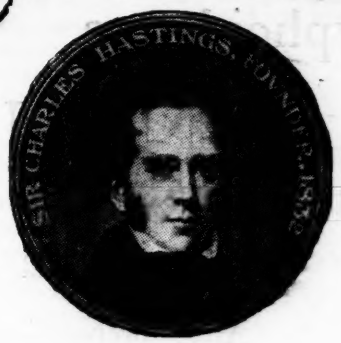

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MEGALITHIC MONUMENTS (I): MAN'S EARLIEST ATTEMPTS AT CONSTRUCTION IN STONE.—Menhirs or single standing stones, cromlechs or stone circles, and dolmens or horizontal stones supported by three or more upright ones, are here illustrated. A host of popular superstitions and beliefs has sprung up around these monuments with regard to their origin and purposes, connecting them with fairies, witches, the devil, giants, heroes, and perhaps especially with Druidical worship and sacrifice. The great sanctity with which megaliths have been invested would make them suitable places of assembly for religious, political and juridical ceremonies, and they may quite well have been so utilised by the Celtic priests—among others—in their time. Among present-day hypotheses may be mentioned those connecting them with stone worship, with sun-worship, with astronomy, and through this with agriculture by calculations serving its practice, and with great events as memorials. While many of those of which the dolmen is the germ certainly were funerary in character, there is very little evidence, if any, to show for what the rest were intended. It is, however, known that the pioneers of this great new development of construction in stone were Neolithic people; they started a movement which continued down to Christian times. Stonehenge is attributed to a date in the early Stone Age.

CULTURE PHASE: NEOLITHIC

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THE IMPORTANCE OF THE INFINITELY LITTLE.

BEING THE MACKENZIE DAVIDSON MEMORIAL LECTURE.*

BY

W. D. HALLIBURTON, M.D., F.R.S.,

PROFESSOR OF PHYSIOLOGY IN KING'S COLLEGE, LONDON.

IN 1798 there died in Bologna one who was born and lived there. His name, which has reverberated down the ages, was Aloysius Galvani. Destined for the Church of Rome, but later expelled from that body, he happily turned to science, and became Professor of Anatomy and Physiology at the University of his native city in 1762. The story of his well-known discovery of what was later called galvanism is well known, and does not need recapitulation here. Helmholtz, writing nearly a hundred years later in an appreciation of Galvani's pioneer work, said:

"When Galvani touched the muscles of a frog with different metals and observed their contraction, who could have dreamt that all Europe would be traversed with wires flashing intelligence from Madrid to St. Petersburg with the speed of lightning? In the hand of Galvani, and first even in Volta's, electrical currents were phenomena capable of exciting only the feeblest force, and could not be detected except by the most delicate apparatus. Had they been neglected on the ground that the investigation of them promised no immediate results, we should now be ignorant of the most important and most interesting of the forces of nature."

Had Helmholtz been alive to-day, how greatly might he have expanded this theme; for even he did not foresee the possibilities of electricity and its ramification into every branch of our daily life, including its applications for the detection and alleviation of many of our ills. Animal electricity in its medical aspect is, it is true, as old as galvanism itself. In its early days thinkers imagined the secret of life had been found, and attempts were made to convert dead into living bodies by its means. It soon lent itself to the worst forms of charlatanism and quackery. But as knowledge progressed and ignorance was dispelled, it found its proper sphere, and the importance of the sphere is evidenced by the existence in our Royal Society of Medicine of a Section devoted to electro-therapeutics.

To trace even in outline the various steps which have led to the present proud position in which this branch of science stands to-day would be a task beyond my powers and beyond your powers of endurance, but I may take as my text to illustrate one feature in the advance (if not its mainspring) a reminiscence of my own.

In 1888 I attended at Bath a meeting of the British Association, and as it was almost the first I had been to I listened to the Presidential and other addresses with great attention and with becoming reverence. The President that year was the great engineer, the late Sir Frederick Bramwell, and well do I remember how he started his address. He began by alluding to a speech he had heard from the late Lord Iddesleigh, who charmed an audience for a whole evening by speaking on the very important subject, "Nothing." Sir Frederick said he would not try to copy this feat, but would do his best to speak on "Next to Nothing." By this neat phrase he meant those little things which are of supreme importance. He gave numerous examples from his own subject to show how it was that attention to details had converted crude machinery into effective and useful instruments, whether they were guns or bridges, engines or ships. Among other subjects he took to illustrate his theme I remember he singled out the telephone as a triumph of science which the "next to nothings" had done so much to perfect. At that time he was naturally not aware of how in later years red-tapeism (and the like) would have taken upon itself to neutralize some of the excellent qualities that science had bestowed upon it. At the conclusion he ventured to prophesy that it would not be long before men were able to fly.

But gifted as Sir Frederick Bramwell was with the prophetic instinct, he did not at that time, now thirty-three years ago, foretell the discovery of those vibrations which it is now customary to term *x* rays, nor of those other kinds of radiant energy which the name of radium calls up. Still less could he have predicted the value of these discoveries to medicine and to surgery, and least of all would he have pictured even in imagination the coming of a man who so fully illustrated the importance of attention to details, to the "next to nothings," a personality whose name we are met together to commemorate this evening. Sir James Mackenzie Davidson, whose sterling and genial character we all remember with affection, was first and foremost one who never spared trouble; he was one whose numerous inventions, the result of his painstaking attention to apparently small and trivial things, succeeded in making the bare bones of his subject live, just as his skiagrams represented them in life-like perspective.

I wish that your Section could have selected someone more capable than myself of dealing with this subject from the technical point of view. But you could not have chosen one who has a greater admiration for the genius and ability of our lamented friend. Your choice has fallen on a physiologist whose labours have been more directed into chemical than physical channels, and I regard it not so much as a compliment to myself, as an honour to our band of quiet workers who are seeking out the ways of Nature by the way of experiment, and are doing their best to give to the art of medicine the sound basis of scientific knowledge. For too long the workers in the laboratory, and those by the bedside, have been groping out their own salvation in separate ways. Your request that a physiologist should address you to-night is evidence that the *entente* between us which is now happily growing needs still further strengthening.

I feel, also, that it does us all good to get at times out of our own special ruts. I feel this evening renewed vigour as I come into the fresh air of electro-therapeutics; I can only trust the members of your Section may be able to return the compliment, and find something useful or even instructive in what I have still to say, even although it deals in the main with another corner of medical science than that they are accustomed to live in.

I am not here only to utter sentiments however heartfelt, or platitudes however true, still, before coming to what after all is my main subject, there is one general consideration which I should like to place before you.

The crowded condition of the medical curriculum, in which the poor unfortunate student is presented with an ever-growing number of subjects for study while the length of the day still remains at the usual standard of twenty-four hours, is producing just now one of those attempts which recur periodically to revise his scheme of study. We are told that there is no need for him to learn his anatomy so thoroughly, that his organic chemistry must be reduced to a minimum; and, last and worst, his physiology course must be drastically shortened, and this in spite of the fact that all these subjects are growing fast, and that medical men are seeing more and more the truth that physiology is the corner stone around which the superstructure of medical science is built. Although physiology still figures on paper as quantitatively large, the restriction suggested is in the kind of physiology to be taught, and the term applied physiology designates that what is wanted for the student is physiology in its direct bearing on medical practice. The frog, which has served for so long as the object lesson of so many physiological lessons, is to be deposed from its high position, and, so far as is possible, experiments on man himself are to be substituted.

In speaking of Galvani's work, I have already given one example of how a subject of purely scientific interest, studied with no ulterior or utilitarian motive, was found to be of inestimable value to mankind. Such instances could be multiplied indefinitely. How would Lister's work have been possible without the preliminary academic labours of the chemist Pasteur? When Miescher set out to investigate the chemistry of the roe of the salmon, did he think that it would be on that investigation that our knowledge of the pathology of gout would be founded? When Bayliss applied himself to study colloids, he could not have dreamed that a powerful weapon against wound shock would be discovered in that by-path. But I need not weary you with other instances. When a scientific man studies Nature for the sake of pure knowledge, who can say to what practical use his followers may adapt it?

* Delivered before the Section of Electro-Therapeutics of the Royal Society of Medicine.

In deciding in my own mind whether I approve or disapprove of these attempts to reform or revolutionize medical training, I am torn by conflicting emotions. On the one hand, I sympathize deeply with the student, and realize the impossibility of getting a quart into a pint jug; on the other hand, there is my love of pure science, and the conviction that any and every truth must ultimately bear practical fruit. I am not conservative by nature, and welcome every true reform, and I have little sympathy with the legendary professor at one of our ancient seats of learning who, at the end of a life devoted to laborious research, thanked God he had never done anything that would be of the slightest use to anyone. One has in such an impasse to face facts and exercise one's common sense. A thorough grounding in general physiological knowledge must remain a *sine qua non*, but in the details of its many ramifications one must make a judicious selection, and the choice must naturally first fall on those parts of the subject in which the practical outcome is already realized rather than on those the application of which is still to seek. From the point of view of those in this Section, and of those who aspire to join its ranks later, one trusts that the electrical phenomena which are so easily demonstrated in all essentials on the muscles and nerves of frogs will not fall under the ban of those who are trying to limit the excursions of the student into the scientific aspects of the subject.

In speaking further, I thought the occasion might not be inopportune to say a few words on some of the modern problems of physiology, and tell you briefly of some of the progress we have made and are making at the present time. To attack all these questions in the space of a single address would be impossible. Again, one has to make a selection, and I intend to limit myself to three. I think it will be found that in these three cases the importance of the "next to nothing" principle will be abundantly illustrated. This is the day of great things, because we are realizing the importance of the infinitely little.

The invention of the word hormone dates from the discovery made by Bayliss and Starling of the chemical messenger which is elaborated in the intestine under the influence of the gastric acid, and which, after absorption, stimulates the pancreas to pour out its juice at the time when it is wanted to carry on to completion the digestive work begun in the mouth and stomach. Previous to this time we were imbued with the teaching that the harmonizing or, to use Sherrington's phrase, the integration of the bodily functions is due to the activity of that ruling system of the body known as the "nervous system." The nervous system is not displaced from its high estate, but for the first time in the history of our science we realized to the full the valuable help rendered to the telegraphic service of the body by humbler but none the less useful ministers to our comfort which Starling aptly compared to the postmen. Although the actual word hormone was not coined until secretin was discovered by Bayliss and Starling, the importance of chemical agents had been really recognized somewhat earlier, and more especially in relation to that group of formerly mysterious organs known then as the ductless glands, but now generally dubbed the endocrine organs; they are so called because they form an internal secretion, that is a secretion which leaves by no specific duct, but by the blood or lymph that streams from the organ in question. It was no wonder that ignorance prevailed for so long as to their function, seeing that the new chemical principle each forms is masked by the protein-rich fluid which it enters. But now, thanks to the overcoming of this and other difficulties, we know a good deal about the thyroid, the adrenal body, the pituitary gland, the islets of Langerhans, the corpus luteum, and others.

Many details have still to be worked out, and some of our ductless glands are territories almost as unknown as Central Africa was in our youthful days. The chemical messengers are all grouped together under the general name hormone, a term which immediately "caught on." Attempts have been made to distinguish classes among the chemical messengers to indicate that some stimulate, some depress, and so forth. But the terms introduced with this object by Sharpey Schafer, and more recently by Gley, have not yet at any rate passed into general usage. Speaking of our French colleague, Professor E. Gley, reminds me that the term "internal secretion" was first employed by another great Frenchman, Claude Bernard, in relation to the liver's important work in pouring sugar into the blood stream at a steady pace. In most cases the index pointing the way to discovery has been the result of removing the organ and of injecting extracts of it into the blood and noting the results. Professor Gley has recently in one of his published discourses laid down the conditions which must be fulfilled in order that a gland may be admitted to the class of endocrine organs. He very properly decries trust being placed merely upon the results of ablation or the effects of injecting extracts. In addition there are three main conditions which must be conformed to in order that a gland may be enrolled within this category: first, the anatomical, that is, the absence of a duct; secondly, the chemical, the recognition in the venous blood of such organs of a specific chemical product; and thirdly, the physiological, the possession by the venous blood of specific physiological properties, and this last is of course the superlative test. He takes the work of Bayliss and Starling on secretin as an example; it was not until Fleig, and Enriquez, and Hallion actually worked with the venous blood coming from the duodenum that the probability of the truth of Bayliss and Starling's views founded upon the results of injection of duodenal extracts was rendered a certainty.

Professor Gley has done good service not only by his own experimental work, but in pointing out the way in which work on this subject must be continued. For we must confess that up till now our conclusions in reference to many of the endocrine glands do not rest on experiments which fulfil all of Gley's conditions. We must further recognize that it does not follow that because most of these ductless organs form internal secretions, all of them do so. Nature seldom works in one pattern, but her *modus operandi* varies. The parathyroids, for example, probably form no substance useful to the rest of the body's machinery, but probably act by removing or neutralizing harmful products formed elsewhere. Noël Paton and his colleagues have shown that the poison they detoxicate is a guanidine compound derived from muscular metabolism, and if this is not removed tetany is the result.

Restricting ourselves, however, to the truly endocrine glands, let us dwell for a moment, not on what we know, but on the gaps in our knowledge. The chemical constitution of that iodine complex which is secreted by the thyroid has been unravelled by Kendall in America. The constitution of adrenaline secreted by the suprarenal medulla is so well recognized that it has even been synthesized by laboratory processes. The composition of pituitrin secreted by the posterior lobe of the pituitary body looks as though it will be the next to yield to the chemist's manipulations. But what do we know of the internal secretion of the part of the pituitary which is probably most essential to life, or of that of the suprarenal cortex, which is certainly the most important portion of that gland, or the nature of the internal secretion of the pancreatic islets, or of the corpus lutem in the ovary, and even of secretin itself? I mention these few hiatuses in our knowledge to illustrate how much our wisdom is in its infancy, what fields are still to be tilled, and lest we swell with undue pride at our present accomplishments. But, whatever gland we think about, we may be sure that quite minute quantities of their various secretions are sufficient to do the necessary work, and that these infinitesimally small amounts are indispensable, not only for our well-being, but for life itself. This, at any rate, has been proven for those secretions which can be quantitatively examined. Even although our knowledge of pituitrin is still over the border, we know that extreme dilutions of pituitary extract can exert marked power in causing plain muscle to contract vigorously, and, in the case of adrenaline, one can demonstrate that the injection of a few cubic centimetres of a solution containing only one part in a million or more of neutral saline diluent will provoke marked physiological effects on heart and blood vessels.

Other examples of organic substances which call forth physiological effects in equally minute or even more attenuated concentrations might be given; there is, for instance, an acetyl derivative of choline, one of the constituents of our body, and the powerful amine known as histamine, which may be mentioned. In anaphylaxis, also, similar infinitesimal amounts of organic substances produce gigantic effects. Such minute doses make the doses of that product of a past generation known as

homœopathists seem enormous in proportion; a reflection which will awake an echo in the hearts of those who deal with radium emanations.

From the days when we learnt physics, we doubtless remember that important natural law which states that action and reaction are equal and opposite. The law holds in the opposing activities of our hormones, and an important branch of study has been to ascertain how such opposing actions are balanced so that they work together for good. The way in which the different organs, endocrine and otherwise, act and react upon each other has been one of the most instructive and interesting outcomes of the discovery of the internal secretions themselves. I do not think one could find any other subject which has in the present day so deeply influenced medicine as the hormone conception. Instead of remaining, as many physiological discoveries have remained, dormant as praiseworthy laboratory curiosities, the application to the practical study of disease has here been immediate, and medicine, surgery, gynæcology, and the numerous specialities of practice have all been profoundly influenced by the new doctrines. Among the specialities one must here particularly allude to the one represented here this evening. Those who, on the one hand, are employing in diagnosis and treatment various electrical forms of energy, and those who are similarly engaged in radiology, have recognized that they have the power of controlling and influencing the endocrine organs to form more or less of these internal secretions for the benefit of their patients. I wish I had the special knowledge to dwell for a moment on this aspect of the problem, but those who are listening to me will be able to fill in the details of this part of the picture. The discovery of radium has been one of the greatest feats of modern science, but I need not tell my hearers that this new power for good may, like the *x* rays, be also in unwise hands an equally powerful agent for evil. When the activity of its emanations on living cells were first demonstrated there was perhaps naturally too great confidence displayed in its ability to cure every ill, including those which, like cancer, had defied every previous effort to conquer them. That phase is now passed, and the proper place of radium in our armoury is being adjusted to the facts. History is always repeating itself, and the story of radium is a repetition of what has occurred before when startling new discoveries had been revealed to the world. In the old days of the alchemists, who sought by magic and by the help of astral and similar agencies to discover the philosopher's stone and the elixir of life, the disappointments and failures were as numerous as the attempts to discover the secret of vitality. When alchemy was replaced by more exact science, new revelations were wistfully and hopefully regarded as likely to yield the long-hidden secret; two of these epochs I have already alluded to to-night—one was the discovery of galvanism in the eighteenth century, the other of radium in the twentieth.

May I digress and linger a moment to mention one more which marked a similar epoch in the seventeenth century? I allude to the discovery of phosphorus. In the early years of that century a substance was prepared by heating heavy spar with combustible organic matter (egg white and charcoal) and this substance glowed in the dark, and for many years the name phosphorus, or light-bearer, was given to any substance which had the same property. The actual element we now call phosphorus was prepared by Brand about 1670, and was at first made in small quantities only from animal products—namely, urine and bones. Can it be wondered at, that in those days of superstition and mysticism the discovery in animal products of a substance which burnt and emitted light without ignition was hailed as a discovery which at last had hit upon the vital principle? Phosphorus played an important part in the development of the theory of phlogiston which soon afterwards dominated philosophic thought, but in time died like so many other theories before and since. The *furore* created by the discovery of phosphorus had been paralleled by the discovery of radium in recent years. Only let us congratulate ourselves that the 250 years which intervened between the two events have taught us more wisdom and we are not so likely to repeat the hysterical enthusiasm of our ancestors.

This, however, is a parenthesis which originated from my mention of the fact that hormones and all that they connote are not simply of chemical interest, but that their importance is recognized as a factor in electro-therapeutics as in other branches of medical science. I do not think I can say the same thing about the second subject I have selected to bring before you. My only excuse for so doing is that it is one on which I can venture to speak at first hand. It may not interest you as electro-therapists, though it is not devoid of importance to you as human beings, for to all living creatures the question of food is of superlative value. The particular portion of this wide problem I intend to say a few words about is one in which also the quantitatively little is qualitatively great. I allude to those substances in our diet which we term the vitamins. The word "vitamin" is not as old as the present century, and although it is not an ideal term it has come to stay, and is certainly less cumbrous than the phrase "accessory food factor" which is its synonym.

The lecturer then gave a brief summary of our knowledge of the vitamins, and alluded to the importance of the "next to nothing" principle there. Though accurate quantitative methods are still to be devised for their estimation, one thing is perfectly certain, and that is that the requisite amount is extremely minute, and this small amount is capable of converting a useless into a useful diet. He then continued:

Before I leave the subject of food may I unburden myself of a suggestion? Empiricism is not always to be condemned. What we call empiricism is frequently the result of past experience. As an example, take a prescription of cod-liver oil, or of butter and cream. A few years ago it would have been impossible to explain why these forms of fat are superior, we will say, to olive oil and vegetable margarine. The mere fact that they are better was empirical, and now the practitioner has been fully justified, and research at last has told us the explanation—namely, the existence in the fats, which are the more valuable for remedying malnutrition, of a health-giving vitamin.

May not this in the future be repeated? If you have high blood pressure why does your medical man tell you you may take fish and poultry and eggs, but that you must abstain from beef and mutton? I can picture a sceptical and argumentative physiologist saying, "Why? The materials you mention and I am advised to take or refrain from taking are all in the main composed of protein, and surely it is not physiological to give me such futile advice." My answer to this would be, "True, it is not explicable yet on physiological grounds. It is the mere result of empirical experience. But wait a few years, and it is quite on the cards that by that time science may have stepped in and explained the puzzle, just as a few years ago it was able to explain why cod-liver oil is better than olive oil." There is probably in the harmful meats some hitherto unrecognized principle, unrecognized because it is present in minute quantities; or it may be the absence of an indispensable material. It is one of the "next to nothings," but it makes all the difference. "There is one kind of flesh of men, another flesh of beasts, another of fishes, and another of birds." I wonder if St. Paul ever imagined these pregnant words contained more than what he intended to convey by them.

The third topic the lecturer selected to illustrate the importance of attention to apparently insignificant minutiæ was that of the capillary circulation, a subject which rose into importance during the war in relation to "shock." Here, again, especially in some forms of secondary shock where actual haemorrhage may have been insignificant, but where crushed tissues were the usual accompaniment, it seems inevitable to accept the views urged by Dale and others, that it is a toxæmic condition. The poison is produced from tissue breakdown, and operates by reducing capillary tone, so that the blood is stagnant and side-tracked in the capillary lake. Whether histamine, which certainly produces a shock-like state in this way, is the actual poison in secondary traumatic shock, or the only poison, is a question still to be answered. But, whatever the poison is, it is one of which a very small quantity produces a very large result.

The lecturer concluded as follows: In conclusion, I must thank you for the patience you have exhibited in listening to me for so long. I wish I could have chosen a subject, or subjects, more akin to your own speciality. But if anything I have said in my disjointed remarks will help you to realize how widespread is the importance of the infinitely little my task will not have been in vain.

GLANDULAR FEVER.

BY

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GLANDULAR FEVER was first described by E. Pfeiffer in 1889 under the title "Drüsenfieber." It may be defined as an acute infectious disease principally of children, characterized by rapid enlargement of the cervical glands and by a less constant enlargement of the liver, spleen, axillary, inguinal and other glands. The disease is rare, but there is some reason to believe that a considerable number of cases are occurring at the present time.

The largest epidemics are those recorded by Park West, 96 cases; Botschkowsky, 54 cases; Byers, 33 cases; Stark, 30 cases; Tschaigajew, 24 cases. Korsakoff has reported 29 cases observed over a course of years.

Pfeiffer stated in his original article that the disease occurred in small epidemics, and especially in "house epidemics"; when one child of a family was affected the others rarely escaped. Subsequent observers have agreed that it is infectious. Fisher records 8 cases in one family, and Chapman 5 in his own household. Park West observed an epidemic in a country district in Ohio, and saw 96 cases in the course of three years, besides hearing accounts of at least 40 others. The 96 cases occurred in forty-three families, about 20 children in the affected families not being attacked. He states that the epidemic spread irregularly, the houses attacked not being in any special contiguity or social connexion with each other. Von Starck's 12 cases occurred in eleven families, Haas's 12 cases in ten families, and Schiller's 11 in nine families. Schäffer's 21 cases occurred in the space of four months in an institution for children, but there is no statement as to the total number of inmates. Numerous sporadic cases are also on record. Authorities agree that it is more common in the spring months.

CLINICAL FEATURES.

The *incubation period* has been noted by many observers and may be stated to be 5 to 10 days, most commonly 7 or 8 days. The extreme limit may be longer.

The disease is principally one of childhood. Botschkowsky had the experience, apparently unique, of observing an epidemic of 54 cases in a battalion of soldiers. Apart from this, it is probably correct to say that at least 80 per cent. of recorded cases were under the age of 12 years, and the majority between the ages of 5 and 9 years. Park West's youngest patient was 7 months and the eldest 13 years. He had no case in an adult. Robertson has reported a case in an infant of 6 months. The youngest of Schäffer's cases was 4 months old and the eldest 16 years.

Adults, however, are certainly not immune. In the series of 464 cases there are 20 adults (excluding Botschkowsky's epidemic), the majority being young mothers of affected children; three patients were over 40 years of age. In adults the condition tends to be very mild and malaise slight, though Korsakoff saw a severe case with nephritis. There is no record of its occurrence during the war. The condition is, however, easily overlooked and may be mistaken for aberrant mumps, though one of us (H. L. T.) spent eighteen months in a hospital for infectious diseases in France without recognizing its entity or calling to mind its existence.

The onset is sudden, with the usual symptoms of an acute pyrexial attack in children: restlessness, loss of appetite, constipation, furred tongue, rapid pulse, and occasionally vomiting. Abdominal pain is sometimes present, and may be severe.

Enlargement of the Lymphatic Glands.

This may be present with the earliest symptoms or develop rapidly within twelve to forty-eight hours. The glands constantly affected are the cervical glands, deep to the sterno-mastoid muscle about the middle of its length. The enlargement is marked, and produces a definite swelling of the neck. On palpation several discrete glands are felt, often the size of walnuts. Robertson records glands as large as a hen's egg in an infant of 7 months, and states that they were painless. The skin is not reddened, and the tissues are not oedematous.

The cervical enlargement is commonly unilateral at the onset. The glands on the opposite side frequently, but by no means invariably, enlarge later, usually within two to four days of the onset, but occasionally not until the first side has subsided to a varying degree. In Schäffer's series of 21 cases the cervical enlargement was unilateral throughout in 11, bilateral from the onset in 3, and affected first one side and then the other in the remaining 7. Some authors state that the left side is much more commonly affected than the right, but there is no definite agreement on this point. Other glands in the neck may enlarge subsequently, but to a much less extent. The initial enlargement is below the level of the angle of the jaw, and the position and general condition of the swelling differs from that of glands secondary to infections of the tonsils, teeth and nasopharynx.

The parotid and submaxillary glands are not affected. The submaxillary glands were enlarged in one case of Schäffer's and in one of Trautmann's, but not in others of their series. The parotid was enlarged in one case of Hörschelmann's, but it is doubtful if this group was really glandular fever. Enlargement of the parotid, submaxillary, epitrochlear and many other glands is referred to by Haas, but without quoting instances. By no other writers are they stated to be enlarged; nearly all have specifically mentioned their absence, and it may be accepted that the parotid and submaxillary salivary glands are not affected. The submaxillary lymphatic glands and possibly the pre-auricular gland may, however, be enlarged.

Enlargement of the axillary and inguinal glands has been noticed by most observers. Park West states that they were palpable in 75 per cent. of his cases, and enlargement has been recorded by Trautmann, Bellotti, Korsakoff, Haas and many others. Pfeiffer, in 1889, said that they were not affected, but Von Starck had noticed them in his series of 12 cases in 1890. Schiller did not find them in his 11 cases, and a few recorders of individual cases noted their absence. It may, however, be accepted that they are palpable in the majority of cases, but never attain the size of the deep cervical glands.

Pain and tenderness of the cervical glands may be entirely absent; there is usually some pain on movement of the head, but palpation of the glands even in the acute stages may be painless. Some pain and difficulty in swallowing may be complained of, and is referred not to the fauces, but under the level of the isthmus of the thyroid.

Enlargement of the mesenteric glands has been much discussed, and involved with this is the occurrence of abdominal pain. Pfeiffer noted pain in the abdomen as one of the characteristics, and stated that it was localized exactly in the mid-line below the umbilicus. Others have not supported this exact localization, and it may evidently be more generalized, but its presence has been repeatedly recorded. Byers does not mention its presence or absence in his group of 33 cases, but with this exception it is referred to by all others who have observed many cases. Park West states that some degree of abdominal pain or tenderness occurred in about 75 per cent. of his 96 cases. The pain may be very severe, as in specific cases published by Dawson Williams, Rudolf, and others.

The mesenteric glands may be definitely palpable. Many writers have not referred to them, but Korsakoff, Haas, Bellotti, and others record their presence. Jones states that they are palpable in 40 per cent. of cases. Park West said that he felt them in 37 of his 96 cases, and believed that the number would be larger if he had examined the earlier patients more carefully.

There is some evidence that the *peribronchial glands* may be affected. Von Starck in 1890 recorded the occurrence of a paroxysmal cough resembling whooping-cough, but without the whoop, and suggested that this was due to the pressure of enlarged peribronchial glands. Similar paroxymal coughs have been noted by several French writers (Moussous, Comby, and Labbé); on the other hand, nearly all the writers state that no cough occurred and that no abnormal signs were present in the lungs. It may be accepted that the lungs are unaffected.

The only recorded autopsy is Korsakoff's. There was definite enlargement of the axillary, inguinal, peribronchial and mesenteric glands, but in this case the cervical glands had suppurated.

OTHER SIGNS AND SYMPTOMS.

The condition of the tonsils and pharynx has been closely observed. Pfeiffer's attention appears to have been attracted to glandular fever owing to the disproportion between the size of the glands and the changes in the fauces. A slight reddening of the pharynx, he says, is the most that is present, and frequently there is no obvious change. Subsequent writers have fully confirmed his observation; thus Park West, Byers, Stark, Korsakoff and Schäffer record absence of tonsillitis in any of their cases, which make a total of 209. Stark's 30 cases occurred amongst children of the London area in whom diseased conditions of the tonsils and pharynx notoriously are very common. Park West states that in his series there were 29 cases with some reddening of the pharynx, and 4 had definite pharyngitis. It may be accepted that usually there is no obvious abnormality of the fauces, but that occasionally there is slight reddening of the pharynx, which bears no relation to the size of the glands.

No *rash* accompanies the condition; Heubner, who spoke at the same meeting as Pfeiffer in 1889, stated that in some similar cases he had seen urticaria was present. Korsakoff, in 1905, says that herpes labialis occurred often in his series, but the only other recorded case is one of Schäffer. Erythema multiforme is recorded in two cases by Tschaikowski; scarlatiniform eruptions occurred in one case of Botschkowski, and in one case of Hörschelmann. Thornton published a case of glandular fever associated with erythema nodosum; this patient was a child of 5½ years, in whom a mitral systolic murmur was present on first coming under observation, and it is impossible to exclude the occurrence of rheumatic fever. There is no record of any other rashes, and these exceptions are obviously negligible in a series of 464 cases, mainly in children.

It may be accepted that there is no eruption associated with glandular fever.

Epistaxis may occur at the onset, which is not surprising if we are to regard glandular fever as an acute specific infection. It is, however, rare. The first instance was recorded by Chapman in 1897, among 5 cases in his own family, epistaxis occurring in 4. It also occurred in 2 cases of Trautmann's, in two of Schäffer's, and in 1 of Rudolf's. It is mentioned by Tschaigajew and Comby. There is no record of other cases. When it takes place it is apparently profuse.

Vomiting occurs occasionally at the onset.

The *pulse* may be rapid, while the temperature is high, but cardiac complications do not occur.

Constipation was mentioned by Pfeiffer as being severe. It may terminate with diarrhoea or with the discharge of slimy motions at the end of the first week. The early writers refer to this sequence as almost a characteristic symptom of glandular fever, and considered that convalescence commenced with the discharge of mucus. Constipation, while evidently common, is by no means invariable, and it is doubtful whether much stress should be laid on it.

The *liver and spleen* are enlarged in a considerable proportion of cases. Pfeiffer noticed that in the severer cases both were palpable, and the majority of subsequent writers have confirmed this. Park West noted that the spleen became palpable in 57 of his 96 cases, and that the liver was enlarged in 87. Korsakoff did not note any definite relation between the enlargement of the spleen and the severity and duration of the illness. There is some disagreement as to the frequency with which the spleen is palpable. Byers, recording 33 cases, does not mention the liver or spleen, and possibly may have overlooked them. Stark mentioned the spleen only once in 30 cases, nephritis being present in this instance. Schäffer states that the liver and spleen were not palpable in any one of his 21 cases. On the other hand, Jones, who refers to 20 cases, states that the spleen was palpable in 80 per cent. and the liver in 90 per cent., and Schiller felt the liver and spleen in each of his 11 cases. Such differences may be partly due to variations in different epidemics and series of cases. Probably it is partly due to individual observers, since it is well known that the recognition of the tip of the spleen is frequently a matter of difficulty and doubt.

From a general study of the literature it appears undeniable that the spleen is palpable in a considerable number of cases, which may be placed at about 50 per cent. Pfeiffer states that it usually becomes palpable at about the fourth day, but there are no other observations for checking this opinion. In our case it was just felt on the third day and easily palpable on the fourth.

The *temperature* usually rises to 101° to 103°, occasionally it may be as high as 104°. It corresponds roughly with the size and duration of the marked glandular enlargement, usually being maximum on the third or fourth day, then falling rapidly and becoming normal early in the second week. When the onset is unilateral the temperature may fall as this side subsides, and then rise again as the opposite side enlarges or if it recurs on the same side. Schäffer noticed such relapses in 10 cases. In mild forms there may be no rise of temperature, as noted by Schäffer and others. In Botschkowsky's 54 cases in adults 10 were apyrexial. The fall may be so rapid as to suggest a crisis, as in some cases of Park West and Von Starck, but usually it is more gradual.

Bacteriological investigations have been principally directed to cultures from the fauces, and, as may be expected, they resulted in the growth of streptococci, staphylococci and pneumococci, with influenza bacilli in a certain number of cases. The earlier observers dealt very fully with these investigations, but little importance will now be attached to them.

Cultures from the glands themselves have been made only in a few cases in which suppuration occurred, and in these streptococci have always been present. In Korsakoff's fatal case streptococci were found in the heart blood and other sites in cultures taken twelve hours after death. The glands had suppurated and the child died with the symptoms of septicaemia. Tschaikowsky claimed that in 3 cases he isolated influenza bacilli from the blood during life. As Schäffer points out, these results must be accepted with caution, as it is stated that the bacilli were isolated on a simple agar medium without blood, and subsequent subcultures were grown on the same medium. Schiller found influenza bacilli, together with streptococci and staphylococci, in the pus from a gland. Loude and Froin in one case isolated pneumococci from the blood. The patient's father had had lobar pneumonia three weeks previously, and they suggest that this was a direct infection.

A general review of the bacteriological investigations reveals nothing specific.

There are very few records of examination of the blood, and these are either scanty or made in cases in which suppuration of the glands had occurred. Jones gives the following results in two cases:

Case 1.—On sixth day, leucocytes 14,900 per c.mm.; on ninth day, leucocytes 8,900 per c.mm.; red cells 4,000,000 per c.mm.; haemoglobin 90 per cent.

Case 2.—On eighth day, leucocytes 7,000 per c.mm.

In one of Rudolf's cases the glands subsided but enlarged again a month later and suppurated. When it was suspected that pus was forming frequent blood counts were carried out, but "showed no leucocytosis."

Just before the operation the blood count was: Leucocytes, 7,000 per c.mm.; red cells, 4,500,000; haemoglobin, 80 per cent.; polynuclear neutrophils, 60 per cent; no abnormal cells. After the operation the number of leucocytes was "about doubled" for a few days.

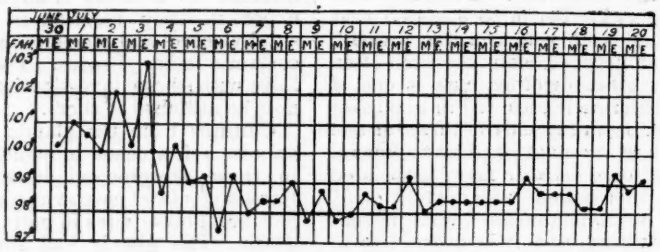
These are the only instances in which definite blood counts are referred to, and no other details are given. Many observers mention the subsequent development of anaemia and its obstinate character.

Complications are rare. Nephritis is the most important. It was mentioned by Heubner in remarks made at the meeting at which Pfeiffer read his original article, and has been referred to by many subsequent writers. When it occurs it is frequently, usually in severe cases, stated to be a "haemorrhagic nephritis." The onset is at the commencement of the illness or within a few days. There is no record of the occurrence of oedema. All writers agree in stating that nephritis never becomes chronic, but the evidence is scanty and cannot be regarded as conclusive. The summary of the statistics given in articles in which both the total number of cases and the number of cases of nephritis is given shows 17 instances of nephritis in a total of 270 cases—an incidence of 6 per cent. There is no record of the occurrence of purpura or of any other form of haemorrhage except the initial epistaxis.

Suppuration of the glands is a very rare occurrence, indeed the earlier writers deny that it ever took place. Only 9 instances are recorded in the literature. One of these, Korsakoff's, was fatal. In all cases in which bacteriological investigations were made streptococci were present; staphylococci or other organisms are also mentioned occasionally. In Rudolf's case the glands subsided, but enlarged again one month later and then suppurated. In all recorded cases the suppuration was confined to the cervical glands.

Otitis media is recorded in 4 cases—in 2 of Schäffer's and in 2 of Durno's. In one of Schäffer's cases the glands had suppurated. There is no mention of otitis media elsewhere in the literature.

Pulmonary complications are confined to the observations of a paroxysmal cough referred to above. Coryza is mentioned by one or two writers, but most observers definitely refer to the absence of any catarrh. There is no record of the occurrence of orchitis, and the diagnosis of pancreatitis has never been made.


JUNE JULY
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101
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98
97

PROGNOSIS.

The prognosis is favourable. The enlargement of the glands usually reaches its maximum about the third or fourth day, and after a further two or three days the glands rapidly diminish in size. At the end of one to two weeks there is no visible swelling, the temperature is normal, and definite symptoms of malaise have passed away. Recurrences are not infrequent, and, as has been mentioned above, there may be either an enlargement of the glands on the opposite side to that originally affected or a return of swelling on the same side. Such recurrences are accompanied by pyrexia and prolong the acute stage.

The slowness of convalescence has attracted the notice of many observers. The glands, though no longer visible, often remain palpable for many weeks or even months. Anaemia is frequently referred to as developing during convalescence and persisting for a considerable time. The general health is poor during this period. Complete recovery finally takes place. No second attacks have been recorded.

Only four fatal cases are recorded in the literature. In Park West's fatal case the child had been previously in poor health. Bellotti had two fatal cases in children, aged 1½ and 3 years; both began with the ordinary symptoms and the glands subsided, but cachexia developed and was finally fatal. In Korsakoff's case the cervical glands suppurated.

This is the only instance in which an autopsy is recorded, and, unfortunately, findings are complicated by the probability that death was due to septicaemia. The cervical, peribronchial and mesenteric glands were greatly enlarged, and the axillary and inguinal glands slightly. Microscopic sections of the glands were said to show hyperplasia of the parenchyma, with signs of inflammation. There was no evidence of tuberculosis or lymphadenoma; ecchymoses were present on the pleura; in the left pleural cavity was 8 oz. of fluid. The spleen was enlarged. The kidneys were in a condition of glomerulonephritis. Streptococci were present in the pus of the cervical glands before death, and twelve hours after death were isolated from the axillary glands, liver, spleen, kidneys, bone marrow, and heart blood.

The following is the account of a case which has been under our observation:

C. G., male, aged 8 years. First seen on July 1st, 1920. Previous health very good. Measles in April, 1920. Had been somewhat irritable for three or four days previously. The parents noticed swellings in the neck on June 30th, and on July 1st the father noticed that the glands were enlarged "all over the body." Slight nausea on previous day, but no vomiting. The general condition was good. He had a good colour and no evidence of anaemia. There was no sore throat. On examination: The lymphatic glands in the neck were markedly enlarged. Deep to the sterno-mastoid and about the middle of its length on both sides were several glands about the size of walnuts, causing a definite prominence in the neck, especially on the right. There was no superficial oedema, and the glands on palpation were discrete, suggestive of the condition found in Hodgkin's disease. Palpation was almost painless. On the right side the superficial submaxillary lymphatic gland was greatly enlarged and bulged away from the jaw. It could be distinguished from the deeper lying salivary gland. The other glands in the neck were also enlarged, but to a much less degree. The axillary glands were enlarged on both sides. In the groin there were two large glands on the right side and smaller ones on the left. In the abdomen two large mesenteric glands were easily palpable just to the right of the umbilicus and slightly below it, and they were somewhat tender. It was thought that the tip of the spleen could be felt. There was no purpura or haemorrhages. The tongue was slightly furred. The fauces showed no abnormality and the mouth was quite clean. The heart and lungs were normal. The urine contained no albumin or sugar, and remained normal throughout. There were no septic foci in the scalp, ears, or elsewhere except one carious molar on the left side, which was painless. The temperature was 100°. On July 3rd the temperature was 103°, but the general condition remained good, and the boy was hungry and wished to be allowed to get up. All the glands were larger and the spleen was now definitely palpable. On July 4th the temperature fell rapidly, almost suggesting a crisis. The glands in the neck were distinctly smaller, but the spleen was now nearly two finger-breadths below the costal margin. The other glands were unchanged. The bowels were opened freely on this day, constipation having been present previously. On July 5th the glands in the neck were again smaller and continued to diminish rapidly from this date. The remaining glands, however, diminished more slowly. By July 11th the patient felt perfectly well and was allowed up. The glands were still diminishing and the spleen was only just palpable. On July 18th the spleen was no longer felt. The glands in the groin appeared slightly larger and the other glands about the same as a week previously. The child appeared somewhat paler than before, and the mother said that he was easily tired.

Subsequently progress was uninterrupted, but the glands, even at the present time, remain palpable. The blood counts are recorded in tabular form. The percentage of lymphocytes is very striking. It rose to a maximum on July 5th and then probably commenced to diminish, at first rapidly and then more slowly, and it is now approaching normal. The large and small lymphocytes are classified together, but throughout large lymphocytes predominated, and on July 5th formed 72 per cent. of the total white cells. There were no abnormal leucocytes and no abnormal erythrocytes. Apparently there was a slight but persistent anaemia. The Wassermann reaction was negative.

Examination of Blood.

Date.	Erythrocytes.	Haemoglobin.	Leucocytes.	Polymuclear Neutrophils.	Eosinophils.	Lymphocytes.	Large Hyalines.	Mast Cells.
1920.		%		%	%	%	%	%
July 1 ...	—	—	15,000	23.0	1.0	74.5	1.0	0.5
July 3 ...	4,800,000	90	14,400	19.0	0.8	77.4	2.4	0.4
July 5 ...	4,850,000	—	—	12.2	0.8	84.6	2.0	0.4
July 11 ...	4,850,000	—	9,000	24.6	1.4	71.0	2.2	0.8
July 18 ...	5,200,000	—	7,800	36.0	1.0	58.0	4.5	0.5
July 25 ...	4,800,000	90	8,100	35.5	1.5	59.5	2.5	1.0
Aug. 1 ...	4,750,000	90	10,000	40.0	2.5	55.0	2.5	—
Sept. 15 ...	5,100,000	100	—	43.4	1.6	50.4	4.2	0.4
1921.								
Jan. 8 ...	5,300,000	100	10,000	57.8	1.4	38.2	2.0	0.6

Other children in the family were not affected, but the patient was isolated early in the attack.

It is probable that a patient under the care of one of us at the Great Northern Hospital was also an example of glandular fever.

This was a boy, aged 7 years, admitted on December 8th, 1920. Malaise had commenced twelve days previously, and after two days the glands in the neck were noticed to be enlarged. They subsided rapidly, and after a few days in bed he was allowed to get up, when it was noticed that the urine was "blood red," and also that the face was swollen. The red urine lasted about a week. On admission he looked pale and the glands in the neck were palpable. The fauces were clear. There were a few small glands in the axillae and groin. The

urine contained albumin and casts. The blood count on December 16th was as follows:

Leucocytes	13,500 per c.mm.
Polynuclear neutrophils	60 per cent.
Lymphocytes...	33 "
Eosinophils	2 "
Large hyalines	5 "

A trace of albumin was still present on discharge on December 31st. There were six other children in the family, none of whom were affected.

A third case has also been under observation at St. Thomas's Hospital; but the glands had almost subsided when the patient was first seen. The blood and urine were normal. Another child in the family had been similarly attacked about a week previously.

Etiology and Pathology.

The nosology of the disease presents several questions. Is it an acute infectious disease? If so, is it a specific disease or an aberrant form of some common fever?

The evidence that it is infectious is sufficient to be accepted as proof. Pfeiffer stated that it occurred in small, limited epidemics and in house epidemics, and while numerous sporadic cases have been recorded, there is sufficient evidence that his statements are correct. Fisher, in 1897, noted 8 cases and Chapman 5 cases in one family, and numerous instances are recorded in which several members of a household have been attacked. It has been observed frequently when this occurs that the interval between successive cases is about seven days, all the members not being attacked simultaneously. For example, this was the interval between the two cases in Rudolf's family, and Park West states that when two children of a family are affected, the second case most commonly commenced on the seventh day after the first.

Examples of more widespread epidemics have been given above, the largest being Park West's 96 cases in forty-three families widely scattered over a large area. Park West noticed that the infection spread irregularly.

The view that it is an acute infectious fever is consistent with the general course of the illness, with the occasional occurrence of epistaxis, with the occurrence of nephritis, and with the observation that treatment has no effect on the course of the acute stage.

Admitting that glandular fever is infectious, the question arises whether it is a specific disease or a variant of some common fever. The similarity to mumps is superficial rather than real. Evidence has been given above that the parotid and submaxillary salivary glands are not affected in glandular fever, and there is no recorded instance of orchitis. In mumps the swelling frequently commences behind the jaw just below the ear, but it is characteristic of glandular fever that the site of the enlarged glands is definitely lower than this—that is, about the middle of the length of the sterno-mastoid muscle. A decisive argument for the distinction of the two diseases is the number of instances in which children with glandular fever have previously or subsequently had an attack of mumps. This occurred in 54 of Park West's cases, and Byers also notes that several of his 33 cases had previously had mumps. With regard to exanthemata, rashes do not occur in glandular fever, and even in the larger epidemics no intermediate cases have been recorded.

The mode of spread in epidemics is sufficient to eliminate syphilis, although in the diagnosis of a sporadic case it might have to be considered. There is no record of any Wassermann reaction. The general type of the glandular affection is unlike syphilis, which does not tend to produce a very marked enlargement of the cervical glands. Again, the mode of spread is unlike tuberculosis. In Korsakoff's fatal case the glands examined showed no signs of tubercle. There is no other record of a microscopic examination of a gland.

Many of the earlier writers considered that glandular fever was a form of influenza. At the present time no one knows what influenza is, but it is noteworthy that the last article on glandular fever in the literature was published in 1914, and it is consequently justifiable to assume that it is not influenza as we have known it in recent years.

With regard to infection from the fauces—another suggested cause—it has been pointed out above how very little change is recognizable at this site. Tonsillitis is practically unknown. Pharyngitis is very uncommon and rarely exceeds slight reddening, yet several authorities have upheld the theory of pharyngeal infection. Trautmann argues on anatomical grounds that the glands affected are those supplied by lymphatics from the pharyngeal tonsil. Most of these writers have ascribed the infection to streptococci on the strength of their presence in cultures from the nasopharynx. This cannot be accepted as an argument of any weight in view of the now known frequency with which streptococci occur in this position. The great enlargement of the cervical glands and the enlargement of the spleen and other glands, together with the rarity of suppuration and the very low mortality, is not consistent with a streptococcal origin. Even when some pharyngitis is present, it is characteristic of glandular fever that the size of the cervical glands is out of proportion to the symptoms and signs in the fauces.

Most French writers refuse to accept glandular fever as a disease *sui generis*. Thus Gallois regards it as only "a special form of influenza," and Labbé as a "cervical adenitis due to a naso-bucco-pharyngeal infection similar to any other acute adenitis." Combemale believed it to be Hodgkin's disease, but the subsequent history of the patients, which in some cases has been watched over prolonged periods, is against this view. Von Starck, noting the occurrence of constipation and of final diarrhoea, discusses the possibility of an auto-intoxication from the bowels. Subsequent writers have often quoted him as accepting this origin, but reference to his article shows that he rejected it.

It appears that glandular fever must be accepted as an acute infection and as a general and not merely a local infection. Further, there is no evidence to connect it with any of the better known acute infectious diseases, and we agree with those who regard it as a disease *sui generis*.

Various epidemics have been recorded which more or less resemble glandular fever. Breinl, Priestley and Fielding described in 1914 an endemic glandular fever which occurred in North Queensland, and was known locally as Mossman River fever. Many hundreds of cases have occurred since 1877. Adults are principally attacked, and it is rare in children. The onset is gradual, with pyrexia for ten or more days, the glands enlarge slowly, and the axillary and inguinal glands are mainly affected. At the onset the blood is normal, but about the end of the first week leucocytosis develops, the white cells being 12,000 to 15,000 per c.mm., with 45 per cent. of lymphocytes, and there is some degree of anaemia. The mortality is under 1 per cent. The glands show a simple adenitis. It is supposed that the infection is spread by mosquitos. It is evident that this is not glandular fever of the type which we are discussing.

Several writers have described outbreaks of epidemic cervical adenitis, especially Sharp, Pruen and Kirkland in 1913 and 1914. The changes in the fauces were marked, tonsillitis was common with exudation or even membrane formation, but diphtheria bacilli were not present. Tonsillar abscess was not infrequent. The cervical glands alone were affected and the spleen was not enlarged. Kirkland says that blood cultures, when positive, and swabs from the throat, showed streptococci. These epidemics would appear to be a definite infection of the tonsils with secondary enlargement of the cervical glands, and the clinical symptoms and course do not agree with glandular fever.

Diagnosis.

Diagnosis has to be made from mumps, acute cervical adenitis secondary to septic foci, acute leukaemia, exanthemata, acute lymphadenoma, syphilis, tubercle, and possibly influenza.

From mumps, glandular fever is distinguished by the position of the initial and main enlargement of the glands being below the angle of the jaw, and by the freedom of the salivary glands, the parotid and submaxillary. The tissues of the neck are not oedematous, and much pain is rare. A previous attack of mumps may have occurred. It must be noted that, though the salivary glands invariably escape, certain lymphatic glands in proximity to them may be involved, producing the impression that the salivary glands are affected. Thus, in one of our cases, the superficial submaxillary lymphatic gland was greatly enlarged and produced a large prominence on the jaw, but examination easily proved that this was not the salivary gland. Possibly the pre-auricular lymphatic gland may sometimes be enlarged, and no doubt an erroneous diagnosis of mumps might be suggested.

Should a blood count be made, the combination may be present of enlarged cervical and other lymphatic glands, enlarged liver and spleen, together with a certain degree of leucocytosis and a greatly increased percentage of lymphocytes. Such a group of phenomena was actually present in one of our cases, and naturally suggested the possibility of acute leukaemia. It is not uncommon in the early stages of acute leukaemia, especially the lymphoid type, for the leucocytes to be only slightly or not at all increased in number. It was noteworthy that the severe symptoms associated with acute leukæmia were entirely absent. The general condition was good, the mouth was clean (oral sepsis is practically invariable in acute leukaemia), there was no vomiting, no purpura and no haemorrhages. Further, the degree of anaemia was very slight, and the stained red cells were normal, neither nucleated cells nor abnormal forms of any type being present, nor were any abnormal leucocytes recognized.

It is almost inconceivable that acute leukaemia could produce such a picture. It was our opinion from the first that this case was glandular fever, but as neither of us was aware of having seen an instance previously, and as we could find no information on the condition of the blood we hesitated to give a good prognosis for some days. There can be little doubt that similar cases sometimes have been regarded in the past as acute lymphoid leukaemia and probably have been recorded as cures. Many of those who have had much experience in diseases of the blood will be able to recall such events. It is well known that marked lymphocytosis also occurs in whooping-cough.

The distinction of glandular fever from acute cervical adenitis secondary to septic infection may be difficult, but there are numerous points of difference which, taken together, should lead to a correct diagnosis. Attention may be directed to the absence of septic foci in the fauces, scalp, ear and elsewhere in glandular fever, to the site of the main glandular enlargement, to the freedom of the skin and subcutaneous tissues, to the rapidity of diminution of the cervical glands and of the fall of temperature, to the rarity of suppuration, and also to the good general condition which may be combined with general glandular enlargement, a palpable spleen and a very high percentage of lymphocytes. The diagnosis from acute tuberculous adenitis might, presumably, have to await the progress of the case.

From scarlet fever and other exanthemata glandular fever is distinguishable by the large size of the cervical swelling, by the absence of changes in the tonsils and fauces, and of toxic symptoms, and by the absence of rash.

TREATMENT.

In the acute stages only symptomatic treatment is necessary. If the cervical glands are painful, compresses, hot or cold, may be applied, or glycerin of belladonna. Constipation should be treated by simple remedies, and there is no indication for the drastic methods recommended in the past.

As convalescence is often prolonged, as some degree of anaemia may develop and a poor state of health may persist for several months, care must be taken, especially with delicate children, and tonics of iron and cod-liver oil and malt should be administered. There is no reason to believe that nephritis becomes chronic, but our knowledge of this complication at present is scanty, and it is advisable to treat it with the same care as an ordinary nephritis.

Glandular fever must be regarded as infectious, and patients should be isolated. A period of fourteen days may be suggested for isolation and a similar period for quarantine.

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ON UNUNITED FRACTURES.

BY

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A FRACTURE which shows no evidence of bony union at the end of twelve months may be regarded as a case of non-union. To treat any disorder efficiently it is necessary to obtain a clear idea of the condition to be remedied and its cause, for the treatment will largely depend upon the removal of the cause.

The Condition to be Remedied.

Normal bone, like all other tissues, is constantly undergoing a steady process of absorption and reformation, the resulting structure accommodating itself to the function to be performed. The inflammatory process of bone is modified by the vessels being enclosed in rigid channels. This delays the formation of granulation tissue and also the removal of damaged tissues. To overcome this disability Nature appears to have provided a special mechanism for absorption—namely, osteoclastic. It would appear that the same processes which stimulate the osteoclastic element very often coincidentally stimulate the bone-forming process—that is, osteoblastic—into activity. Bone is only a specialized type of connective tissue, and osteoblasts in early stages are indistinguishable from fibroblasts; it is not surprising that fibrous union is not uncommon. It is well known that the pituitary and also thyroid gland secretions have an important influence upon bone formation. Pituitary secretion particularly produces a hypertrophy of interstitial growth of bone.

The chief features noted on examination of the ununited fractures are: atrophy of the bone; loss of vascular supply; sclerosis of surrounding soft tissues and the bone ends.

Causes of Non-union.

The causes of non-union may be conveniently divided into two main groups.

Group I.

(*a*) Some upset between the osteoclastic and osteoblastic elements possibly due to derangement or abnormal internal secretions.

(*b*) Disuse.

(*c*) Defective blood supply.

Group II.

(*a*) Non-apposition of fractured ends from various causes—for example, interposition of soft structures; over-extension with weights; loss of bone.
(*b*) Movement between apposed ends.
(*c*) Prolonged severe infection.

With reference to Group I: Comparatively little is known about (*a*), but pituitary extract is certainly worth a trial; (*b*) is an important factor, and everything possible should be done to encourage use consistent with prevention of movements at the site of fracture. It is here that massage plays an important part. As regards (*c*) the blood supply may be injured originally or later cut off by formation of fibrous tissue, and either of these conditions certainly leads to very delayed union.

Under Group II are classed those causes of non-union which may be called lack of opportunity. The non-apposition of fractured ends is, I think, by far the greatest cause of non-union, and this is, in the great majority of cases, produced by the interposition of some soft structure.

The practice, as was advocated by Leriche, of wholesale removal of all bony fragments in compound comminuted fractures is to be condemned.

Movements between the fractured ends is, I believe, another very common cause of non-union or delayed union, and I venture to state that far more damage has been done by neglect of really adequate splinting than good has accrued by the much vaunted early movements, which have often been instituted regardless of all other considerations.

Treatment.

Due regard must be paid to the general condition of the patient. Inducing the patient to drink large quantities of milk and the giving of calcium salts I believe to have no beneficial effects. Doses of anterior lobe of pituitary, 10 grains daily, by mouth, of fresh gland, or subcutaneous injections of extract of anterior lobe, are well worth a trial, especially in those cases of delayed union which are particularly common in the tibia. During the administration of pituitary the urine must be examined for sugar, and the administration stopped or dose reduced if glycosuria becomes marked. I have not as yet got sufficient data to make any positive statements on the influence of pituitary extract.

The most important part of the treatment will be that directed to the local condition. Here massage and electrical treatment are important to improve and maintain nutrition and keep all the surrounding structures in good condition. Movement and use should be encouraged whenever possible—for example, the wrist and hand in cases of ununited humerus. Where infection is still present this must be cleared up, and an interval of at least three months allowed after healing; during this time special attention should be paid to all joints and soft structures, and use of the whole part encouraged, a temporary splint or support being used the while to allow of maximum use. Deformities should be corrected where present.

This delay for the clearing up of slightly infected cases is not always a necessity; it depends upon the type of operation contemplated. I have treated several cases of non-union of humerus in which there has been a sinus, and obtained excellent results by a step operation or dovetailing and providing drainage.

It is sometimes desirable to perform two operations. At the first scar tissue is excised and the sclerosed ends of bone removed; the wound is then completely sutured and the main operation done a month later. This preliminary operation is the more indicated in those cases where prolonged infection has been present and a bone graft is contemplated, for it will serve not only the purpose of eliminating unhealthy tissue, but also as an indicator that infection is absent.

Injured nerves are best dealt with after union has taken place and proper treatment can be devoted to the part; it is seldom possible adequately to treat the two conditions concurrently. Of course, nerves merely caught in between the bone ends and adherent must be freed, but, on the whole, I prefer to interfere with the nerve as little as possible at the time of operating on the fracture.

The operation consists in (1) attaining apposition; (2) retaining apposition without possibility of movement between the ends.

The fractured ends are exposed by the most convenient route consistent with minimum injury to muscles, nerves, and vessels. The ends are then freed from all fibrous tissue. Most or all of the sclerosed bone is removed and several holes made with a fine drill. The method of actually attaining apposition will depend upon the bone and the condition of the bone ends—for example, 3 in. shortening of a humerus is a trifling matter causing little disability, but it would be a most crippling deformity in a tibia. The methods employed are (1) the "slot or dovetailing" method, (2) the "step" method, (3) the sliding bone graft, and (4) bone transplantation, the slot being filled with an accurately fitting piece of bone cut from some other bone, usually the tibia.

The last is the most successful type of bone transplantation to use. Intramedullary pegs of bone, where they are used to bridge a gap, are prone to fracture after a period of time. Sometimes it may be desirable to transplant a whole piece of bone—for example, a piece of fibula. Speed is of importance directly bone is exposed, as it dries very quickly, and to prevent this the parts must be kept bathed with warm normal saline. In every case the ends are securely bound together by drilling holes and using thick thirty-day chromic catgut. When this has been done quite good stability is obtained, and the operation cannot be regarded as satisfactory unless this is so, particularly in cases of bone graft.

It is to be noted that many patients have a rise of temperature for a few days after the operation, but this is not to be taken as an indication for opening up the wound unless the rise of temperature is maintained. In a few cases where there is extensive scarring, the skin may slough, and this condition is best treated with spirit dressings, thereby the necrosed area is kept sterile and in a short time an aseptic scab will be formed without infection of the deeper tissues of the wound.

The whole limb is then put up in plaster, paying particular attention to fixation of the joint above and below. On no account should plates, wires, screws or other non-absorbable substances be used—they are unnecessary and almost without exception injurious. A radiogram, through the plaster, may be taken in a day or so, to see that all is well.

In cases where dovetailing or step operation has been performed the plaster can be removed at the end of six to eight weeks and a radiogram taken, after which the plaster is reapplied. It is usual to find that there is sufficient union to permit of limited movements being instituted in one of the joints. At the end of three months the plaster can be replaced with a detachable support, applied to afford protection from severe strains, but allowing of free movements of all joints. During this period the patient is encouraged to use the limb, and massage and electrical treatment is applied.

After a bone graft or transplantation, it is wise not to remove the plaster before the end of three months, and it should then be reapplied for another three months and a protective splint used for a further period. The time in plaster will depend upon the condition found in the radiogram.

The length of time during which a bone has been ununited seems to have little influence upon the ultimate prognosis, and a period of years of non-union should not deter one from operating with a reasonable certainty of a good result.

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THE TREATMENT OF HAEMORRHOIDS BY ELECTROLYSIS.

BY

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IN the earlier part of 1914 I read a paper at the Royal Society of Medicine on the treatment of haemorrhoids by electrolysis, and I referred there to the very satisfactory results which I had obtained by this method. During a great portion of the four and a half years of the war, which I spent in Boulogne, I had many opportunities of carrying out this treatment, and the more I see of its results the more convinced I am that, in suitable cases, it is the method of election for this very troublesome complaint. For the sake of convenience haemorrhoids may be divided into three classes:

1. *External*, which occur at the muco-cutaneous margin of the anus, and are due to varicosity of the inferior haemorrhoidal branches. These as a rule give no trouble unless they become

inflamed and thrombosed, and for such I believe the best treatment is an incision and removal of the clots.

2. *Internal*, which do not prolapse, and which give rise to symptoms of haemorrhage and a dragging pain. The operation for this condition is severe—though not usually accompanied by danger—and painful, and I have found that the large majority of such cases can be cured by applications of the high frequency vacuum tubes, aided by suppositories containing adrenaline.

3. *Intero-external*, which prolapse and become "nipped" by the sphincter, giving rise to great pain, and, frequently, both haemorrhage and discharge. These, and true internal haemorrhoids, are usually dilatations at the junction of the superior and middle haemorrhoidal veins.

It is for the last named very common type of pile that patients usually apply for relief, and for which sedative and astringent ointments and suppositories afford little permanent benefit.

I am convinced that the treatment by electrolysis is the most certain and the least painful. No general anaesthetic is required, and the patient is not confined to bed, as a rule, for more than twenty-four hours at most. There is no pain on defaecation after the treatment, nor reflex difficulty in emptying the bladder, and the cure, as far as the haemorrhoid treated is concerned, is permanent. The prolapsed pile is treated in the manner to be described, and the patient then left alone for ten to fourteen days. If at the end of that time there is another haemorrhoid in evidence it can be treated in a similar manner, but I have never had to administer more than three treatments in any case, and this only on one occasion.

Method.

The patient, having had the bowels thoroughly cleared out by an aperient over-night and a saline in the morning, is placed on the left side, and a large indifferent electrode, connected to the negative terminal of a source of constant current, is applied over the right buttock and hip, taking care that it is in close apposition with the skin. If the haemorrhoid is not fully prolapsed the patient is asked to strain to bring it down. The pile is now painted with a mixture of phenol gr. 30, menthol gr. 30, quinine hydrochlor. gr. 22, adrenaline gr. 1/100, which I have found to be the best "surface anaesthetic," and after a minute or two it will be found that a local anaesthetic can be injected into the tissue below the base of the haemorrhoid without pain, provided that a sharp fine needle be employed. I usually employ sol. urea and quin. hydrochlor. (Parke, Davis and Co.). After about ten minutes the pile is completely anaesthetic, though almost immediately after being painted it can be painlessly grasped with artery catch forceps to prevent its retraction. Two or three long zinc needles, or thin spears made from "slivers" of sheet zinc and soldered to flexible insulated wire, are thrust into the base of the pile parallel to its long axis, and several more into the substance of the pile. All these needles are connected to the positive pole of the source of current, and are packed round with oiled wool to prevent their causing blisters on the parts round the anus. The current is now slowly turned on till a strength equal to about 12 to 15 milliampères per needle is reached, and is allowed to flow for ten or fifteen minutes and then gradually turned off. It will be found that the needles are quite difficult to withdraw owing to the firmness of the clot formed, and it is often well to reverse the current, making the needles negative, for a couple of minutes to facilitate withdrawal.

After the treatment the pile has changed from purple red to grey. It is covered with adrenaline and chloretone ointment and pushed well up into the rectum, and a suppository of chloretone gr. 5, morphine gr. ¼, and novocain gr. ½ inserted. The patient is sent home with directions to go to bed for twenty-four hours, to take a dose of confection of senna and sulphur the following night, and is also instructed that, should the pile prolapse, it must be replaced at once.

The process by which the haemorrhoid is cured is twofold. The vasa vasorum are obliterated, and thus the blood supply is cut off from the walls of the vein, and at the same time a firm, closely-adherent clot is formed in the lumen of the dilated portion.

Advantages of the Method.

1. It is practically painless at the time of treatment.
2. There is very little, if any, pain afterwards.
3. The patient is not kept away from his work.
4. There is no risk of separation of the clot as far as my experience goes, or in the experience of others who have used this treatment.
5. There is no necessity to dilate the sphincter.

I do not consider this treatment is indicated in cases where the piles do not protrude, nor when they are very large.

I do not propose to quote a series of cases, but two recent ones are typical:

A lady, 75 years old, had for two years suffered from small prolapsing haemorrhoids, constant discharge from the anus which stained her linen, and intense pruritus. Two treatments at an interval of ten days, which caused her absolutely no pain either at the time or afterwards, has effected a complete cure of the haemorrhoids, of the discharge, and of the pruritus.

A medical man in busy general practice who had had a prolapsing pile for eighteen months, and discharge and pruritus, was treated on a Saturday afternoon. He had some pain that night, but visited his patients on Sunday and every subsequent day. He has had no trouble since that one treatment.

These results are typical of what one may expect with careful technique in suitable cases.

TUBERCULIN IN EPILEPSY.

BY

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FOR many years we have administered tuberculin with excellent effects to at least two hundred patients each week. These patients chiefly suffer from chronic ulcerative pulmonary tuberculosis and tuberculous adenitis, and are resident in the Consumption Sanatoria of Scotland, the Colony of Mercy for Epileptics, and the Orphan Homes of Scotland, Bridge of Weir, Renfrewshire.

Two cases particularly are interesting, and deserve to be recorded. Some textbooks[1] on the subject of tuberculin mention epilepsy as a contraindication to its administration. Our experience shows that, so far from that being so, it is a decided indication for its use, especially under two circumstances: (1) the presence of a tuberculous lesion, active or quiescent; (2) a family history of tuberculosis.

Six and a half years ago we began to give tuberculin to a patient (A. D.), who was 32 years of age, who had suffered from epilepsy of the major type since the age of 7, and who had a large mass of tuberculous glands below the right ear with several discharging sinuses; the mass was as large as a closed fist. There was a smaller mass supraclavicularly on the left side, and chronic pleurisy at the left base. No other change was made in the patient's life—the environment, work, and drug treatment were the same as had been the case for many years. We hoped by tuberculin to help the tuberculous condition, and had no thought of it benefiting the epilepsy. In the course of a year and a half the glands disappeared entirely and the pleurisy cleared up. *Pari passu* with the disappearance of the tuberculous lesions, the epileptic fits became fewer and after two and a half years ceased entirely, and the patient likewise improved mentally. When the fits had been absent for a period of three years the patient was discharged from the colony, and she took up work as a domestic servant. We have kept her under observation and under tuberculin treatment during the year, and she has remained perfectly well. For four years thus, apparently as the result of this one new factor—the administration of tuberculin—this patient has been free both from tuberculosis and from epilepsy.

Encouraged with the results of treatment in this case, about eighteen months ago we began to administer tuberculin to several other epileptics who had no clinically obvious or apparent tuberculosis, but gave a family history of tuberculosis. One of these (F. A.) has responded excellently. He was 14 years of age, and had had epilepsy for an indefinite period—the father could not tell how long. His mother had died of consumption. The fits were very severe in character, and one month no fewer than 338 were recorded—309 major and 29 minor. He was decidedly weak-minded, and was certified under the Mental Deficiency Act (1913) as a mental defective. Tuberculin was first given to him in November, 1919. For nearly fourteen months he has had no signs of epilepsy, and mentally he has also improved. The records of his case show that previously he was pugnacious and irresponsible, but during the past year he has been well behaved, and fairly industrious.

Five others, to whom tuberculin has been given for six to twelve months, show a diminution in the number and in the severity of their seizures. Three show no change. We have begun to give tuberculin to a hundred epileptic

patients, ignoring the presence either of a tuberculous lesion or of a hereditary strain. It is well known that *post-mortem* results point to the vast majority of those who attain maturity presenting tuberculous lesions at some part. It will be interesting in course of time to note the results.

The action of the tuberculin in epilepsy as demonstrated in those cases is uncertain. It may be due to its specific effect on some tuberculous growth in the neighbourhood of the cortex. It may be that epilepsy that is tuberculous in origin is of the Jacksonian type. This drug certainly does lead to the resolution of masses and of adhesions which are palpable, and such masses or adhesions may reflexly lead to the onset of epileptoid seizures.

The tuberculin used was Burroughs, Wellcome and Co.'s B.E. and P.B.E. mixed in equal parts, and it was given in doses beginning at 0.00000001 c.cm., gradually increased to 0.4 c.cm. The injections were given at intervals of seven days to begin with, and later of fourteen days. The treatment has gone on without any intermission. General reactions have been avoided, but once or twice local reactions of a rather severe type occurred when large doses of bacillary emulsion were given. On two occasions cold abscesses formed, which had to be aspirated.

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[1] *Tuberculin in Diagnosis and Treatment*. Seventh edition, p. 233. (Bandelier and Roepke.)

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SAPRAEMIC GLYCOSURIA.

I HAVE read Dr. C. G. Higginson's article on sapraemic glycosuria (February 26th, 1921, p. 296) with interest, as I have at present under my care a patient who developed glycosuria shortly after a carbuncle appeared on his neck.

My patient, a stout and previously healthy man of 64, consulted me some three weeks ago for a large boil on the nape of his neck. His urine contained no trace of sugar. In spite of topical applications the carbuncle spread rapidly, and I made a deep crucial incision throughout its extent; it continued to spread until it extended almost from ear to ear, with a breadth of some 3½ in. He was seen by a surgeon, who excised the whole of the affected tissue, leaving a large gaping wound.

Previous to the operation I volunteered the information that there was no glycosuria. Two days later the patient complained of thirst; the temperature was subnormal throughout. I again examined the urine, and found that it contained 17 grains of sugar per ounce. A diabetic regimen reduced the sugar to 4 grains per ounce in twenty-four hours, and in forty-eight hours it had completely disappeared, and has not been present since. After a period on strict diet the patient returned to ordinary diet; in spite of this he has had no further glycosuria.

Some two years ago I saw another patient with a tiny black patch on his great toe; he had 54 grains of sugar per ounce in his urine. Gangrene set in with great rapidity in spite of strict diet, and soon involved the whole foot; he also began to exhibit symptoms of impending coma. He fasted completely for four days, when the amount of sugar became reduced to 4 grains per ounce. He was then put for a time on a diet, gradually increased, of eggs and French beans, and the sugar soon disappeared. I eventually amputated his foot. He did well, and now gets about with an artificial limb. With a diet containing no sugar, but with a moderate amount of bread and one potato daily, his urine remains sugar-free, but on one occasion when he exceeded his limit of starchy food, sugar reappeared freely, to disappear again on resumption of previous restrictions.

Some years ago I had a case of carbuncle in a diabetic which, in spite of dietetic restrictions current at the time, continued to spread, the patient eventually dying of diabetic coma.

There would appear to be two types of cases—one in which the carbuncle or gangrene is the sequel to the diabetes, and the other in which the carbuncle or gangrene is the causative agent of a sapraemic glycosuria, or perhaps coincident with and due to an intermittent glycosuria.

I shall be interested later on in estimating the sugar tolerance of my present patient, but shall prefer to wait for his complete recovery. The success of the Allen treatment, as expounded by Dr. Leyton, in my case of gangrene has made me think that such treatment might be generally useful in cases of diabetic gangrene, whether the gangrene be cause or effect.

Old Hill, Staffs. THOMAS E. MITCHELL, M.B.

IN the BRITISH MEDICAL JOURNAL of February 26th Dr. Charles Gaskell Higginson finishes his paper on sapraemic glycosuria with the sentence:

"At present gangrene and carbuncle are the most striking and misleading agents in the causation of sapraemic glycosuria, but further investigation will doubtless reveal a long series of such agents differing from each other very much in the power of causing sapraemic glycosuria."

This prophecy has led me to record some observations which may throw a light upon the condition. The percentage of sugar in the blood of a healthy man six hours after food may be taken as 0.11, and although sugar may appear in the urine with this blood sugar, it is the exception rather than the rule; usually the blood sugar is above 0.18 per cent. in glycosurics. In pyrexia the blood sugar rises above the normal, and this is so well known that the appearance of glycosuria gives but little more anxiety than albuminuria in pyrexia.

Everyone who has had experience in the treatment of diabetes realizes that toxins produced by most infections modify metabolism sufficiently to lead to a return of sugar in the urine whilst the patient maintains the diet which was the optimum, and had permitted the blood sugar to fall to normal. The quantity of toxin may be small. I have seen the injection of one hundred million dead bacilli cause glycosuria in a woman who was upon a diet of only half her optimum. The reappearance of sugar in a diabetic child permitted of the correct prophecy, three days before their appearance, that she would develop the spots of chicken-pox. (The sister was convalescent from that disease.)

The sapraemia of pyorrhoea alveolaris is so common and important a factor in diabetes mellitus that extirpation of the infection has often led to the disappearance of glycosuria with but an insignificant modification in diet. The evidence upon which this is based is rather lengthy. The causes of glycosuria are so numerous that any tentative explanation offered is offered with all humility. It seems to me probable that one form of diabetes mellitus is due to a deterioration of the cells of the islands of Langerhans in the pancreas. This deterioration is sometimes due to a direct infection accompanied by a slight pyrexia for a few days. Some of the cells are destroyed, some impaired, and others left normal. The impaired cells have a reduced vitality and may be paralysed or destroyed by various toxins. Chloroform and ether often destroy them and turn a mild diabetes into a severe one. A mild toxin may lead to a temporary glycosuria from which recovery may be complete. I tend to the view that sapraemic glycosuria and glycosuria due to non-diabetic gangrene are simply two varieties of toxic glycosuria.

London, W. O. LEYTON, M.D., D.Sc., F.R.C.P.

NORMAL DELIVERY AFTER TRAUMATIC RUPTURE OF UTERUS.

IN view of the interest aroused by the discussion at the Royal Society of Medicine, in May of last year, on spontaneous rupture of the uterus during labour, following Caesarean section, I think the following case, unique I believe, will be of interest.

A married woman, aged 22, five months pregnant, fell from a railway platform on to the rails, rupturing the uterus. I examined her two, seven, and eleven hours after the accident, and the uterus appeared normal. As at the last examination she showed symptoms of internal haemorrhage, I diagnosed concealed haemorrhage, and, turning her on to the left lateral position, tried to rupture the membranes. As I was unsuccessful in this, I got Dr. Gordon Ley to see the case. He saw her fifteen hours after the accident, and decided to open the abdomen. When this was done, he found the uterus ruptured on its anterior surface for about 9 inches, and the foetus and membranes lying in the abdominal cavity. I believe the foetus had slipped out of the uterus, when I put the patient into the left lateral position, eleven hours after the accident. The foetus, placenta and membranes were removed, the uterus stitched up with two layers of No. 3 chromicized catgut, the abdominal cavity swabbed out, and the abdomen closed. Nineteen months later the patient became pregnant and was delivered after a normal labour at full time. The placenta was somewhat adherent

and she had fairly severe haemorrhage after its removal. This was controlled by an injection of pituitary. Otherwise the puerperium was normal.

I believe this is the first case of normal labour following traumatic rupture of the uterus to be reported.

Woking. R. THORNE THORNE.

Reports of Societies.

CONGENITAL SYPHILIS.

THE discussion on congenital syphilis which was opened on February 25th in the Section for the Study of Disease in Children of the Royal Society of Medicine (BRITISH MEDICAL JOURNAL, March 5th, p. 342), was concluded at a further meeting on March 16th.

Dr. H. MORLEY FLETCHER remarked that in his experience of the last twenty-five years in London congenital syphilis appeared to have undergone considerable modification. The number of infants with frank manifestations of syphilis, such as skin eruptions and condylomata, was much less than it used to be, although this did not imply a diminution in case-frequency, only a change in type. He had not seen a single instance in which a positive Wassermann reaction had followed a provocative injection in a child, nor had he met a case with a positive reaction in the cerebro-spinal fluid in a child when the blood reaction was not also positive. In syphilitic children, especially during the first few years of life, the resistance to infection generally was lowered. The association of congenital syphilis with tuberculosis was not sufficiently appreciated. Lymphadenitis was the form of tuberculous disease he had seen most frequently in syphilitic children. In tuberculous cases in which there was any family history of syphilis, or in which any stigmata were present, the Wassermann test should be done. One of the most striking features of syphilis was the widespread nature of the lesions it caused. He dealt in particular with the morbid changes in syphilitic kidney, which in the stillborn foetus showed evidence of arrested development, and there was similar evidence in the infant, together with the beginning of sclerosis, which became more diffuse as the age advanced. Syphilis should always be borne in mind in cases of renal disease in children. He believed that larger doses of mercury, of which children were tolerant, should be given.

Dr. JOHN ADAMS gave some further particulars of his work in the clinic at Thavies Inn, to which many references have been made in this JOURNAL. During the last year, of the 37 pregnant women admitted with syphilis and treated, all gave birth to living children, 36 of whom showed a negative Wassermann reaction and one a positive. The treatment of congenital syphilis in older children was very unsatisfactory, but ante-natal and post-natal treatment was most encouraging. He had not seen a case of secondary syphilis in a child during the last two years in the clinic over which he presided, and if there were no manifestations of syphilis within the first twelve months one might be confident that there would be none afterwards. When a woman of seven months' pregnancy contracted syphilis, the child appeared to be born healthy without ante-natal treatment, and to remain negative to the Wassermann test, doubtless owing, as Dr. Amand Routh had suggested, to some ferment in the placenta which had the power of intercepting and destroying the syphilitic virus. Dr. Adams urged that lying-in centres should be established in every large town, with medical officers specially appointed to look after them.

Dr. R. C. JEWESBURY gave an account of the clinic at St. Thomas's Hospital, which was started rather more than a year ago for the treatment of children suffering from congenital syphilis. He reproduced a number of family histories, including the regular type—that is, a number of miscarriages followed by live births, and ultimately, perhaps, by the birth of healthy children—and the irregular types, which followed no such progress. These two types were about equal in frequency. In a number of cases—about 10 per cent. of those investigated—in which the mother was syphilitic before the birth of the child, the child was born apparently healthy and continued without the appearance of any signs which called for attention until perhaps the tenth year or later, when symptoms—chiefly mental, such as dullness—developed; these cases were the hardest of all to treat. The total number of cases treated in the year was 145. The mothers of all these children were known to be syphilitic, but in 9 cases the infection occurred after the birth of the child, so that the syphilis in the child was acquired. Only 47 of the mothers had had any treatment before or during pregnancy, and in only 39 of these cases was this treatment at all systematic. The results were as follows:

	Mothers Untreated.	Mothers Treated.
Cases investigated	77	39
Total pregnancies	322	53
Miscarriages or stillbirths	97	1
Infants died	73	6
Children still alive at time of investigation...	152	46
Mortality of children born alive...	32.4%	11.5%

Mr. J. E. R. MCDONAGH said that at the Lock Hospital it had been found that if a woman had contracted syphilis up to the fifth month of pregnancy the chances were that the child would be born syphilitic; if in the sixth or seventh month, the chances were about equally divided; and if in the eighth or ninth month, the chances were that the child would be born not syphilitic. Many of the children in this last category, however, acquired syphilis after birth as a result of suckling, and he thought it well to assume that every child of a syphilitic mother was syphilitic. He did not look forward hopefully to the results of subsequent pregnancies in the case of women who had been treated during one pregnancy. Once a woman was syphilitic, the chances were, however much treatment she might receive, that she would be syphilitic in subsequent pregnancies.

Mr. H. NEAME gave some particulars of the results of the treatment of interstitial keratitis with arsenic in addition to ordinary mercury. He spoke on the basis of 24 cases carefully tested at the London Hospital. It was doubtful whether, if a patient came up for treatment before both eyes were affected, the treatment could prevent the infection of the second eye. In five of his cases the second eye became infected after treatment. He thought it reasonable to assume that arsenical preparations, if given in large doses, could prevent complications such as choroido-retinitis, seeing that the choroid was a vascular structure. His doses were generally 50 per cent. above the recognized doses for the size and weight of the child. He believed that when the interstitial keratitis was actually established the treatment was of benefit in improving the visual acuity in a very large proportion of cases, and he was sure that prophylactic treatment would be of much benefit in preventing interstitial keratitis.

Mr. A. T. PITTS, discussing the teeth in congenital syphilis, mentioned that out of some thousands of cases he had never seen Hutchinson's teeth in the milk dentition, though cases had been recorded, and there was no reason why, if the infection began early enough in the foetus, these should not occur. He suggested *a priori* that syphilis should be regarded as one of the causes of hyperplasia of the milk teeth, and any well-marked cases should arouse suspicion sufficient to warrant further investigation.

Dr. RONALD CARTER, who spoke from the general practitioner's point of view, said that there was a good deal of nervousness and jumpiness with regard to congenital syphilis. His own strong impression, from twenty-five years of general practice, was that congenital syphilis was comparatively rare, but the statistics lately given by Dr. Helen Campbell of Bradford caused some amazement and misgiving. He did not think that such statistics should be accepted unquestioningly.

Dr. F. LANGMEAD, the President of the Section, in reviewing the discussion, said that its most important feature was the general consensus of opinion as to the extreme value of the treatment of pregnant syphilitic women.

Sir HUMPHRY ROLLESTON, in replying, said that the change in the type of congenital syphilis, to which Dr. Morley Fletcher had drawn attention, was possibly due to some alteration in the strain of the spirochaete, which, instead of being attracted towards the skin, sought the viscera and nervous system. One interesting fact brought

out in the discussion was that acute infections might stir up syphilis in a frank form. With regard to treatment, he thought that they had perhaps been too much afraid to push mercury to the extent that was desirable. He congratulated Dr. Adams and other workers in ante-natal and post-natal treatment on their results.

INSTRUMENTAL ABORTION.

A MEETING of the West London Medico-Chirurgical Society was held at the West London Hospital on March 4th, with the President, Dr. F. J. MCCANN, in the chair. A paper was read by Dr. BERNARD H. SPILSBURY on instrumental abortion. Observing that abortion was a practice by no means confined to civilized communities, he instanced some of the crude methods in use amongst primitive races—for example, pummelling the abdomen with stones. For the production of abortion the most effective methods were those in which violence or other physical agents were applied directly to the uterus. Success depended on the amount of the local disturbance, and to some extent on the readiness of the uterine reaction—a factor which varied in different individuals. The following were some of the commoner methods used:

1. Passing an instrument into the cervical canal or into the body of the uterus. In self-attempted abortion the favourite instrument was a hat-pin, crochet hook, or a skewer. Skilled abortionists resorted to more suitable instruments, such as catheters. Without the requisite anatomical knowledge a woman was most unlikely to pass an instrument into her own uterus unless prolapse was present.
2. Intravaginal injections of various fluids.
3. Intrauterine injections of fluids, of which soap solution was a favourite. Even scalding water had been used.
4. Blowing air through a catheter passed into the uterus.
5. Manipulation of the external os uteri with the hand.
6. Packing the vagina.
7. Abdominal massage of the uterus.
8. Local application of electricity.
9. Dilatation of cervix and immediate removal of the products of conception—chiefly employed by medical practitioners.

The dangers of instrumental abortion were three—infection, haemorrhage, and shock. Infection was favoured by the large raw surface in the uterus and the proximity of large blood vessels to the placental site. Streptococci and the colon bacillus were the most frequent infecting agents. In fatal cases the course of infection varied greatly. At the one extreme was a rapidly fatal septicaemia with little or no local suppuration, and at the other was a prolonged septicaemia ending in pyaemia. Septic pulmonary infarcts were common. Massive embolism of the pulmonary artery might occur. Haemorrhage alone was occasionally responsible for death when the placental site was damaged or the uterus perforated, but it was more frequently associated with septic infection in fatal cases. Shock often occurred at the moment of passage of an instrument into the uterus and was usually transient, but occasionally instant death occurred. This might also result from the injection of fluid into the uterus.

The PRESIDENT referred particularly to treatment of cases of attempted abortion. Treatment must be prompt and first directed to a thorough cleansing of the whole genital passages. If this proved ineffective there should be no hesitation in opening the abdomen and if necessary removing the uterus.

Dr. LAPTHORN SMITH endorsed the President's statements, and pointed out that the doctor's first duty was to save the patient, and not to act as a detective. It was always wise in these cases to call in the aid of another practitioner both for his medical assistance and to avoid any appearance of secrecy. After cleansing the passages he advised the free use of powdered boracic acid in the vagina.

Dr. W. H. WILLCOX congratulated Dr. Spilsbury on his comprehensive paper, and referred to Dr. Spilsbury's unrivalled experience of these cases during the past fifteen years. He said that frequently instrumental abortion was aided by ecbolic drugs given either before or after the mechanical interference. He was glad that two important points had been emphasized. The first was that the mere passage of an instrument into the pregnant uterus might cause sudden death; several instances of this had occurred in recent years. The second point was the extreme rapidity with which septicaemia often occurred, since in many instances septic organisms were directly introduced into the peritoneal cavity.

Dr. A. KNYVETT GORDON said that from his experience in the treatment of many cases of puerperal septicaemia he had come to regard the administration of large doses of antistreptococcic or anticolon bacillus serum (according to the bacteriology of the case) as the most valuable constitutional remedy we had. At least 100 c.cm. should be given in two pints of saline into the subcutaneous tissues. He strongly deprecated the use of vaccines in acute cases; it was wrong in theory and disastrous in practice.

Dr. J. A. MANSELL MOULLIN agreed with what had been said regarding early treatment. Free drainage of the infected uterus was imperative, with laparotomy if necessary. Dr. F. G. LLOYD said that these cases were always unsatisfactory from the practitioner's standpoint. He strongly advocated sharing the responsibility with another practitioner in suspected cases of criminal abortion. Any deposition made by the patient could only be taken as evidence if the patient fully appreciated that she was beyond hope of recovery.

HAEMOCHROMATOSIS AND BRONZED DIABETES.

A MEETING of the Royal Medico-Chirurgical Society of Glasgow was held on February 18th, when Professor ROBERT MUIR gave a lecture and microscopic demonstration on haemochromatosis and bronzed diabetes. He pointed out that the essential pathological feature was the deposit of iron containing pigment in great amount and in unusual positions, this resulting in haemochromatosis. Diabetes resulted only when the lesion in the pancreas was of sufficient degree, there being cirrhosis in this organ as well as in the liver. Two cases were described in which both bronzing of the skin and diabetes were present, and reference was made to the estimations of iron carried out with Professor Shaw Dunn in one of these. An account was given of two cases at an early stage of the affection, and from these the inference was drawn that the earliest lesions were cirrhosis of the liver and pancreas, with deposits of haemosiderin in these organs and in the retroperitoneal lymphatic glands. In the pancreas the changes occurred at an earlier period in the secreting epithelium than in the islands of Langerhans, but the results did not warrant a conclusion as to the relation of the lesions in these structures to the onset of diabetes. The lecturer contrasted the deposits of pigment with those occurring from abnormal haemolysis, and pointed out that they differed both in amount and in distribution, those in haemochromatosis being much greater and occurring in sites, such as thyroid, heart muscle, skin and stomach, in which haemosiderin resulting from haemolysis did not occur. From these facts and from the fact that in haemochromatosis there was no evidence of increased blood destruction or regeneration, it was not justifiable to conclude that the iron pigment was actually derived from haemoglobin. There might be an inability to use up again the iron derived from normal haemolysis, but in this case the peculiar distribution of the pigment could not be explained. The essential factor in haemochromatosis appeared to be a special affinity of the tissues and organs for iron, and the source of the stored iron must ultimately be the iron in the food, but whether or not it passed through the form of haemoglobin was not certain. The cirrhosis of the liver, and possibly of the pancreas, seemed in some way to be related to this abnormal metabolism of iron, but there must be some special factor, as in most cases of cirrhosis of the liver the accumulation of pigment was absent. The accumulation of iron must go on for a long period of time, sometimes for two or three years, even if all the iron in the food were retained.

DIATHERMY FOR INOPERABLE GROWTHS.

A MEETING was held at Liverpool of the Liverpool Medical Institution, conjointly with the Manchester Medical Society, on March 3rd, with Dr. J. E. GEMMELL in the chair. Sir WILLIAM MILLIGAN read a paper on the treatment of inoperable malignant growths of the pharyngeal and epilaryngeal regions by means of diathermy and radio-diathermy. He pointed out the type of case suitable for diathermy treatment and described the

rationale of the treatment. In cases in which diathermy was done close to large blood vessels great care had to be taken, as otherwise there was a risk of sloughing of arterial walls and severe secondary haemorrhage. In many cases it was advisable to tie the main blood vessels leading to the affected regions. Diathermy treatment had the advantage of sterilizing the tissues, blocking the lymphatics and small blood vessels, and of readily destroying malignant cells owing to their having in all probability a lower vitality than normal cells. Where the growth to be treated was situated in the immediate neighbourhood of the larynx, it was advisable to perform a preliminary tracheotomy. In small growths the best results appeared to follow the use of a current of from 500 to 900 milliampères, but in large growths 1 to 2 ampères were necessary. Where there was much necrotic tissue it was a good plan to perform a preliminary scraping, great care being taken, however, to avoid any bleeding as far as possible. The pain produced was, as a rule, not great until about the eighth or tenth day, when it was considerable owing to the separation of the slough and the formation of a raw granulating surface. The presence of glands did not negative diathermy operations, and glands might be treated either by diathermy itself or by intensive *x* ray treatment. Where intensive *x*-ray treatment was used it was advisable to desensitize the skin either by the application of pressure or by the subcutaneous injection of salt solution.

The advantages of diathermy were:

1. It might be employed when ordinary surgical procedures were impracticable.
2. It did not produce much, if any, shock.
3. With reasonable care it was a bloodless procedure.
4. It had the merit of sterilizing the tissues, blocking vascular and lymphatic vessels, and preventing the dissemination of the cancer cell.
5. It frequently afforded relief from painful symptoms and mechanical difficulties in cases surgically hopeless.
6. Septic and bronchopneumonia were much less frequent than after cutting operations.

Its disadvantages were:

1. It destroyed both healthy and diseased tissues.
2. The walls of adjacent blood vessels might become softened and secondary haemorrhage result.
3. Where the skin was involved keloid cicatrices might result.

He referred to a series of inoperable surgical cases where by means of diathermy life has been prolonged for from two and a half to three years with complete comfort.

Variations of the Normal Stomach.

Dr. A. E. BARCLAY discussed the variations of the normal stomach. He maintained that the old anatomical pictures were caricatures, and that the distortions were due to the action of formalin or other preservatives, coupled with the effect of rigor mortis. Essentially the stomach was a living muscular tube whose very varied alterations in appearance were largely due to alterations in muscular tone. The tonic action was a function of the living muscle, and could only be studied in life by means of *x* rays. The main function of this tonic action was to stabilize the stomach so that it maintained the contents in tubular form in spite of gravity. When tone relaxed the contents descended to the lowest part of the stomach. He demonstrated models of normal empty and full stomachs, and also a series indicating the way in which its shape was changed by the alteration of posture. Tonic action was responsible for the maintenance of the shape of the normal stomach, and he insisted that transitory loss of tone and gastroptosis were simply variations of the normal. He then dealt with the musculature, and laid stress on the great importance of the innermost layer, the incomplete and powerful band of oblique fibres passing down on either side of the lesser curvature, and illustrated the band by a series of dissections by Jefferson. He pointed out that in atony this oblique band was apparently unaffected, while the rest of the muscle was thinned out. In gastroptosis, on the other hand, the oblique fibres were elongated proportionately with the other coats.

Professor E. S. REYNOLDS mentioned some points arising in connexion with vascular lesions of the brain, quoting illustrative cases. He referred particularly to meningeal haemorrhage occurring during birth, to emboli and their results, and compared these in their symptoms and course with thrombi and haemorrhage. He alluded to the difficulty which often occurred in diagnosing whether a hemiplegia was due to thrombus or haemorrhage, and the consequent difficulty in treatment.

Sir WILLIAM THORBURN gave an account of cases of posterior rhizotomy and of drainage of the spinal theca. He related several personal cases in which the operation of rhizotomy had been performed for gastric crises, and analysed the published records. With regard to rhizotomy for pain, he indicated, again from personal cases, why in many instances relief was not to be anticipated, and why the results were less satisfactory than in gastric crises. He did not recommend Foerster's operation for spastic paraplegia. He then referred to cases resembling transverse myelitis, in which drainage of the theca spinalis was followed by rapid recovery. He recalled the earlier work of Horsley on so-called chronic spinal meningitis, and strongly urged the exploration of any doubtful cases of this type; in practised hands the operation of laminectomy was was as safe and reliable as laparotomy.

THE CIRCULATION IN ACUTE INFECTION.

AT a meeting of the London Association of the Medical Women's Federation held on March 8th, with Mrs. FLEMING, M.D., in the chair, Dr. ESTHER HARDING read a paper on the circulation during and after acute infection. She pointed out that this problem involved a discussion of the conditions not only of the heart and myocardium, but also of the blood vessels, the nervous mechanism—central or peripheral—controlling blood vessels, and of the blood, as all these divisions of the circulatory mechanism were affected, primarily or secondarily, in acute infections. Her data were gathered chiefly from a study of diphtheria and influenza, but probably similar effects could be demonstrated in many other diseases—for instance, acute rheumatism, typhoid fever, pneumonia, and cholera. Diphtheria was, she said, particularly suitable for studying circulatory changes, because in this disease they were well marked and the complications of pyrexia were practically absent. Observations on the specific gravity of the blood in toxaemic cases showed that the slight general oedema—so called "lymph-logging"—was accompanied by a definite increase in the specific gravity of the blood, due to the loss of part of the fluid content, which led to a decreased volume of the blood in circulation. This fact suggested that the circulatory failure of diphtheria might be, in part at least, due to a condition resembling the oligaemic phenomenon described by Yandell Henderson in cases of shock. Recognizable dilatation of the heart was rare in fever hospitals, probably because of the complete rest enjoined on the patient, but very rapid dilatation might occur whenever exertion had been allowed at too early a stage of convalescence. Quickening of the heart, related either to myocardial insufficiency or to low peripheral blood pressure, occurred during most fevers. Slowing of the heart was the rule in certain fevers—for instance, typhoid fever—and it was very frequent in severe diphtheria and was usually of very grave significance. Of abnormal rhythms curtailed diastole frequently accompanied increased rate, sinus arrhythmia tended to disappear as the heart quickened. Sir James Mackenzie taught that its reappearance might be taken as a sign of the return to normal, but Dr. Harding found an irregularity which she had taken to be sinus arrhythmia practically always present in cases of diphtheria with slowed heart rate. Sir James Mackenzie, to whom she submitted tracings of the condition, suggested however that the condition was not of true sinus type and might be peculiar to diphtheria.

The late effects of infection might be grouped under two headings: myocardial weakness, and weakness of peripheral circulation, which might or might not be vasomotor in origin. The differential diagnosis between the two types was important from the point of view of treatment. In both the patient complained of feeling slack, there was some breathlessness and palpitation, fatigue from mental exertion, and irritability; in both there was an excitable heart, shortened diastole and poor exercise response. In the myocardial group the patient was at his best in the morning after a night's rest, and got more and more tired as the day went on; in the peripheral weakness group the patient was tired in the early part of the day,

but improved with exercise. The myocardial group were breathless all the time and the breathlessness was of the anoxaemic type, with curtailed expiratory pause; the peripheral type were breathless only after exertion. For the first group prolonged rest was necessary, and bromides and digitalis were very useful; in the second type strychnine, cold baths, and adrenaline by the mouth first thing in the morning were often very helpful. It was important, also, in dealing with long-continued debility following acute infection not to forget the possibility of functional weakness dependent on a psychological cause.

Reviews.

DISEASES OF THROAT, NOSE AND EAR.

THE task of producing a textbook on *Diseases of the Throat, Nose and Ear*[1] within a volume of reasonable size has severely taxed the powers of Dr. DAN MCKENZIE, and had the author concentrated himself on one or other of these subjects we believe that he would have succeeded in writing a book of more permanent value. While Dr. McKenzie writes with a freshness of style and originality of thought which makes the book eminently readable, he shows rather too pronounced a tendency to break away from accepted teaching. This would no doubt be admirable and justifiable in a monograph on some special subject, but in a textbook it is apt to give the student somewhat one-sided views. References are not given, though numerous writers are quoted. The author, however, does not always show a correct sense of proportion in giving prominence to the opinions quoted; sometimes he attaches great weight to a minor point, while at others he seems scarcely to give credit where credit is due. As an instance of this neither Sluder nor Whillis and Pybus are mentioned in connexion with tonsillectomy. Much as he has undertaken within the precise limits of the title, the writer has gone still further and introduced material not strictly cognate. A striking example of this is the part dealing with diseases of the thyroid gland, which is introduced in the chapter on diseases of the trachea. The thyroid gland, of course, falls to some extent within the province of the laryngologist as well as of the general surgeon, and the writer rather deprecatingly begins his description with the words "Only those diseases of the thyroid gland will be touched upon which have particular bearing upon laryngology." Yet he touches upon almost all of them. Thus exophthalmic goitre is included, though it presents a problem of general medicine, and has no special connexion with laryngology, as malignant disease may have. The author has devoted much space to operative surgery; this is, on the whole, very helpful, and brings the subject well abreast of the times, though here and there a somewhat unexpected vein of pessimism shows itself. In the section on the ear there are certain statements regarding the intracranial complications of middle-ear disease which demand notice. The author states that in uncomplicated cases of lateral sinus thrombosis optic neuritis is absent. Presumably he means in cases in which lateral sinus thrombosis is the only complication, but in actual fact optic neuritis is not infrequent in such cases apart from other complications. Again, ligature of the jugular vein in every case is strongly advised by Dr. McKenzie. The indications, however, both for and against this procedure were laid down definitely by Ballance many years ago, and nothing has since been added. In dealing with abscesses of the brain, whether cerebral or cerebellar, the author advises a preliminary lumbar puncture; but this is a procedure which has been condemned by good authorities, since the sudden alteration in intracranial pressure may cause the abscess to burst. Finally, it is strange that a description of otosclerosis should contain no reference to the classical researches of Albert Gray, although other authorities are mentioned. The book affords a fair and comprehensive survey of the latest work in the subjects indicated; its value is to be found in its breadth of outlook, while such defects as we have ventured to indicate seem to arise from the author having attempted to cast his net too wide. Such matters will readily lend themselves to correction in a future edition. Dr. McKenzie has made a valuable contribution to laryngology and otology by treating his subject in an unconventional manner; such a book has the merit of stimulating the reader to think for himself.

[1] *Diseases of the Throat, Nose and Ear.* By Dan McKenzie, M.D., F.R.C.S.E. London: W. Heinemann (Medical Books), Ltd. 1920. (Roy. 8vo, pp. 661; 199 figures, 2 plates. 42s. net.)

The fact that a third edition of Dr. ROSS HALL SKILLERN'S book on the *Accessory Sinuses of the Nose*[2] has already been called for is striking evidence of its popularity, for the previous editions were produced as recently as 1913 and 1916. We venture to say that the author has well merited the success his volume has achieved. In all essentials, both in form and material, the book is unaltered from the previous editions, but the opportunity has been taken of introducing such additional information as was derived from experience in the war. Amongst other things it is interesting to note that the author attributes the comparative rarity of wounds of the frontal sinus, in comparison to those of the antrum of Highmore, to the use of steel helmets. In this edition there is an account of Mosher's method of exenteration of the ethmoid capsule, illustrated by an excellent series of drawings. Another interesting, though minor, addition is a short account of the experiments of Caldera, which prove that inhaled medicaments reach the mucosa of the sinuses. These naturally did not appear in the first edition. The book remains and is likely long to remain not only the most exhaustive and accurate exposition of the subject, but also one to which it is natural to turn in any case of doubt or difficulty for sound and practical advice. In this respect, the manner in which the vexed question of the treatment of the diseases of the frontal sinuses is approached displays the care and judgement of the writer, and the advice given is a model of wisdom and good counsel. No laryngologist can afford to be without the help of this book, and the only criticism we have to offer which bears on it particularly as a work of reference is that it deserves a better index.

[2] *The Catarrhal and Suppurative Diseases of the Accessory Sinuses of the Nose.* By R. H. Skillern, M.D. Third edition, thoroughly revised and enlarged. Philadelphia and London: J. B. Lippincott Co. 1920. (Med. 8vo, pp. 442; 247 figures, 5 plates. 30s. net.)

THE SYMPATHETIC AND THE ENDOCRINE GLANDS.

THE ninth volume in order and the eighth to appear of the thirty-two promised parts of the *Traité de pathologie médicale et de thérapeutique appliquée*, edited by Emile Sergent, Ribadeau-Dumas and Babonneix, is that on *Sympathique et glandes endocrines*, by LEREBOULLET, HARVIER, CARRION and GUILLAUME.[3] Although clearly it is impossible to study one apart from the other, the idea of combining the accounts of the sympathetic with those of the glands of internal secretion in the same volume is both novel and convenient. The endocrine glands are first dealt with, and then, in the remaining third of the volume, the sympathetic system is described by A. C. Guillaume, who devotes sixty pages to the anatomy and physiology, and by P. Harvier, who summarizes the pathological aspects. The concluding chapter, on the therapeutical uses of the endocrine glands, has been entrusted to Carrion, who points out that there does not appear to be any general contraindications to the administration of organic extracts, and that so long as they are given by the mouth the question of anaphylaxis may be neglected. But in the case of each therapeutic product there are, of course, points of importance that must be taken into consideration. Formerly, when disturbances of a single gland, such as the thyroid in myxoedema or the adrenals in Addison's disease, formed the guiding principle in our conception of endocrine disorders, the problems of etiology and treatment were comparatively simple; but now that the functional correlation and interdependence of the glands of internal secretion have been established by experimental, physiological, and anatomical research, the more difficult subject of the pluriglandular syndromes—a term introduced by Claude and Gougerot in 1907—must be faced. As the physiology and anatomy of the endocrine glands do not

[3] *Sympathique et glandes endocrines.* Par P. Lereboullet, Harvier, Carrion, et Guillaume. Tome ix, Traité de pathologie médicale et de thérapeutique appliquée (E. Sergent, Ribaboau-Dumas et Babonneix). Paris: A. Maloine et Fils, Editeurs. 1921. (Demy 8vo, pp. 357; 31 figures. 18 fr.)

justify a classification of pluriglandular disorders, a clinical method has been adopted, and on these lines three main groups are described: (1) Primary change in one gland with secondary disorders in one or more—for example, Graves's disease with ovarian insufficiency and amenorrhoea; (2) the association of two uniglandular syndromes—for example, myxoedema with acromegaly; (3) the association of several uniglandular syndromes without well-marked predominance of any one. The most potent causes of pluriglandular syndromes are syphilis, whether congenital or acquired, and tuberculosis, and one of the commonest forms is that due to insufficiency of the thyroid, testis, and adrenal.

In his general introduction Lereboullet, referring to the treatment of pluriglandular syndromes, states that in some cases the extracts of the affected glands should be given successively, whereas in other instances they should be given simultaneously; but his favourite preparation is a cachet containing extracts of thyroid, pituitary, ovary, and adrenal, and he finds that thyroid extract is better borne when combined with adrenaline or pituitary extract than alone. The whole subject matter is clearly and attractively described, and we get a good picture of contemporary French opinion.

ANXIETY HYSTERIA.

THE unpretentious little volume on *Anxiety Hysteria*,[4] of which Dr. C. H. L. RIXON and Dr. D. MATTHEW are conjointly the authors, is one which it is definitely a pleasure to read. Many books have been written on the war neuroses, but we do not recall one which would appear so exactly to meet the needs of the busy practitioner as this. The subject is presented in clear, precise, and non-technical language. The psychology is sound though elementary, and it suffices to give the practitioner an understanding of the symptoms which are peculiar to these nervous cases. The chapter on treatment is practical and detailed, and it is evident that the authors' views are based upon a wide experience. The therapeutic measure utilized more especially is that of "free association," but the use of the term psycho-analysis is avoided on grounds which appear to be sound. This term has now come to be regarded as implying adherence to a particular view as to the origin of the neuroses, and in its place "Mental Exploration" is employed as a term which does no more than describe the method of treatment adopted.

Colonel Sir A. Lisle Webb, Director-General of Medical Services, Ministry of Pensions, contributes a sympathetic foreword to this volume, and with his views as to its value to those who are brought into contact with the problems of functional nervous disorder we are in complete agreement.

THE PHYSICAL BASIS OF HEREDITY.

JUST as the publication of the *Origin of Species* gave an enormous impetus to research in comparative anatomy, so the experimental work of Grigor Mendel has created an army of workers who have turned their attention to the problems of heredity. The results of their investigations have yielded a vast output of literature. One of the most recent books, dealing in a more or less comprehensive manner with the results so far obtained, is that by Professor T. H. MORGAN of Columbia University, entitled *The Physical Basis of Heredity*.[5] It is one of the series of monographs on experimental biology now being published in America.

The subject of heredity is one of the utmost importance not merely from the purely scientific point of view, but also from its bearings on the health and social conditions of the community. Mendel obtained his facts by the careful record of results of experimental breeding and crossing of plants. For some years past this line of attack has been, and is still being, carried on and extended. This further work has, in the main, confirmed Mendel's conclusions. It was soon found, however, that breeding experiments alone, whether in plants or animals, afforded no explanation of the facts. Consequently, a solution of the problem was sought by cytological investigation. This has yielded many facts and much theory. Professor Morgan has attempted to give a summary of both in his book, and has added a bibliography which extends to twenty-seven pages, but is yet by no means exhaustive.

Cytologists regard the chromosomes as the important if not the sole carriers of hereditable characters. Recent cytological researches have taught us, however, much with regard to protoplasmic inclusions and a knowledge of their behaviour in cell division. These, together with observations on maternal inheritance, afford much room for speculation as to the part played by the cytoplasm, if any, in the transmission of characters from parent to offspring. Several chapters are devoted to a discussion of these problems and to the observed facts upon which it depends.

Plough's interesting and important experiments on the influence of temperature on chromosomal "crossing over" are recounted, and in the author's opinion can be adduced as evidence against the "reduplication theory" of Bateson and Punnett.

It is impossible in a short space to deal adequately with the many aspects of so wide a field as are dealt with in the volume under consideration. The author's general attitude towards the problems of inheritance is set forth in the introduction, and he there states that one of the objects he had in view in writing the book was to show that objections to "particulate inheritance" have no real foundations in fact. Nevertheless, however intimate may be our knowledge as to the behaviour of the chromosomes during resting and mitotic phases, a perusal of the book shows that we are still a very long way from understanding the causation of such behaviour. The field for speculation seems almost illimitable.

Professor Morgan's work in this and in other fields is well known and appreciated by all biologists. Any book of which he is the author is sure to arouse interest. In this instance he has succeeded in placing before us a good account of the present position of the subject. He may well be congratulated on the result. It is "stiff reading," but the subject matter requires "stiff thinking."

THORPE'S DICTIONARY OF APPLIED CHEMISTRY.

THE interval between the publication of the last edition of Sir EDWARD THORPE'S *Dictionary of Applied Chemistry*[6] and its immediate predecessor was twenty-two years. In the preface to the new edition, the first volume of which was published a few weeks ago, the editor considers it necessary to apologize for the fact that, owing to circumstances arising out of the war, it has not appeared earlier; yet the interval on this occasion is only nine years. We have heard much of the influence of applied chemistry on the operations of the war, but Sir Edward Thorpe maintains that it is equally true that the war exercised a great influence on applied chemistry, both in this country and abroad, leading to an enormous expansion, more or less permanent, of certain branches. New products have been made, new processes devised, and established methods improved and extended. The progress of manufacturing chemistry in this country and in other English-speaking countries has, he believes, been permanently affected for good. The entire work has been carefully revised, and for this purpose many new contributors have been found. The new edition, however, has one disadvantage—that it has been found necessary to increase the size. The last edition contained five volumes, its predecessor three; the new edition will contain at least six, possibly seven.

The first volume of the new edition carries the matter from A to C, the last article being a lengthy account of the uses of calcium and its salts. The article on alkaloids is contributed jointly by Dr. George Barger, F.R.S., Professor of Chemistry in relation to Medicine in the University of Edinburgh, and Dr. F. L. Pyman, Professor of Technological Chemistry in the University of Manchester. Professor Barger has also written articles on several drugs,

[4] *Anxiety Hysteria. Modern Views on some Neuroses.* By C. H. L. Rixon, M.D., M.R.C.S., and D. Matthew, M.C., M.B., Ch.B.; with a foreword by Colonel Sir A. Lisle Webb, K.B.E., C.B., C.M.G. London: H. K. Lewis and Co., Ltd. 1920. (Crown 8vo, pp. 136; 8 illustrations 4s. 6d. net.)

[5] *Physical Basis of Heredity.* By Thomas Hunt Morgan, Professor of Experimental Biology in Columbia University. Philadelphia and London: J. B. Lippincott Company. 1920. (Demy 8vo, pp. 305; 117 figures. 10s. 6d. net.)

[6] *A Dictionary of Applied Chemistry.* By Sir Edward Thorpe, C.B., LL.D., F.R.S., assisted by eminent contributors. Vol. i. Revised and enlarged edition. London and New York: Longmans, Green and Co. 1921. (Med. 8vo, pp. 752+x; illustrated. 60s. net.)

including that on aconitine and the aconite alkaloids, and on adrenaline. The latter contains an account of the physiological methods of estimating the substance and a list of substitutes. Professor Halliburton again contributes the articles on bile, blood, and bone. It has not been found necessary to make any considerable alterations in the article on bread, but it is noted that under war conditions arrangements were made in Germany to collect the germ of wheat from the mills and extract the 10 to 12 per cent. of oil which it contains, with the intention of using it for the production of margarine. The longest article in this volume is that on analysis, the first part written by Professor G. T. Morgan, of Birmingham, and the second, on electro-chemical analysis, by Dr. F. Mollwo Perkin.

Thorpe's *Dictionary* has long been an indispensable part of laboratory libraries, whether those of research institutes or of manufactories, and the new edition, judging by the first volume, will fully maintain its high reputation.

NOTES ON BOOKS.

MENTAL nurses will find in *Model Answers to Questions on Nursing*,[7] by Mr. HECTOR MACPHAIL, a book which should prove of real assistance to them in preparing for their examinations. Many nurses with a good knowledge of their work have had little experience in putting their ideas on paper, and for such, a book of this kind is almost a necessity. Its answers contain a large amount of useful information which will serve to supplement and to express in a somewhat different form the contents of the ordinary nursing manuals. The answers are brief and to the point, and altogether as many as 240 questions are dealt with. The regulations for the nursing certificate of the Medico-Psychological Association have recently been altered, and, no doubt, Mr. Macphail will note this in any subsequent editions of his book. We observe in one question that manic-depressive insanity is spelt *maniac*-depressive. We fear it is not a misprint and suspect that some examiner must be blamed for this rather than Mr. Macphail himself.

Dr. C. B. BURR, an American psychiatrist, has revised his book entitled *Practical Psychology and Psychiatry*,[8] the fifth edition of which has recently been published. It is written for the use of nurses and attendants who are taking a course in mental nursing. Both the theoretical and practical parts are clearly written, but we are of the opinion that the chapter on "Symbolism in sanity and insanity" is most unsuitable in a textbook designed for mental nurses. It is almost incredible that these crudely sexual details and vulgarisms should be recounted for the instruction of young, immature, and often poorly educated girls, and it is most difficult to find any possible value to nurses in the information thus conveyed.

Sarah Battle, who is still something of an authority, held that in square games (she meant whist) "all that is possible to be attained in card games is accomplished." At any rate, if for whist we substitute its grandchild, Royal Auction Bridge, a great many doctors will be found to endorse Mrs. Battle's opinion. It needed little observation during the war to discover the popularity of auction among members of the medical profession. In every officers' mess it beguiled the tedium of inactive times, at home and abroad; it was played in sun-scorched tents, and in waterlogged dug-outs by the light of candles that flickered with each bursting shell; and the medical officers who served afloat found it a solace on every one of the seven seas. We may therefore be excused for noticing very briefly two little treatises on this game of cards that have been sent to us for review. The more important of the two is perhaps the new edition of *Royal Auction Bridge*[9] by the well known writer "Bascule," who now includes a chapter on Contract Bridge for those who agree with him that that is "the game of the future." In other respects it differs little from the first edition, which went through many impressions. The other work is a second edition of Colonel HINGLEY'S *Hints on Royal Auction Bridge*.[10] This, in a conversational way, sets out to guide the player through some of the difficulties of declaring a suit and playing a hand. The author's method of instruction may be found helpful: "The truth is, a fearful lot of rubbish is written about bridge; the subject is very soon exhausted, and all any author can do is to point out some rules for guidance, nothing more. Some people prefer the very safe game, and some the forward game." In fact, the game of bridge is very like the game of life, save that it has rules framed by the Card Committee of the Portland Club, with the co-operation of a representative of each of five other clubs.

Medical chess players, of whom we believe there are a good number, may be glad to know of a little book, *The Pocket Guide to the Chess Openings*,[11] by Messrs. GRIFFITH and WHITE, the joint authors of a more comprehensive work on the same subject. Here will be found a selection of openings illustrating methods of play in the early stages of the game, drawn mainly from the practice of masters of to-day. For the guidance of less experienced players a summary is given of the laws of chess, together with a short definition of terms, a statement of the relative value of pieces, an introductory chapter on general principles in tactics and strategy, and a page of useful maxims which the beginner might well commit to memory.

[7] *Model Answers to Questions on Nursing set by the Medico-Psychological Association.* By Hector Macphail. Third edition. London: The Scientific Press, Ltd. 1920. (Cr. 8vo, pp. xv+240. 6s. net.)

[8] *Practical Psychology and Psychiatry.* By C. B. Burr, M.D. Fifth edition. Philadelphia: F. A. Davis Company. 1921. (Post 8vo, pp. 269; 11 illustrations. 2 dols. net.)

[9] *Royal Auction Bridge.* By "Bascule." New edition. London and New York: Longmans, Green and Co. 1920. (Fcap. 8vo, pp. 210. 5s. net.)

[10] *Hints on Royal Auction Bridge.* By Lieut.-Colonel S. H. Hingley. Second edition, revised and enlarged. London: G. Bell and Sons. 1920. (Fcap. 8vo, pp. 116. 3s. 6d. net.)

[11] *The Pocket Guide to the Chess Openings.* By R. C. Griffith and J. H. White. London: G. Bell and Son, Limited. 1920. (3¼ × 6¼; pp. 116. 3s. 6d. net.)

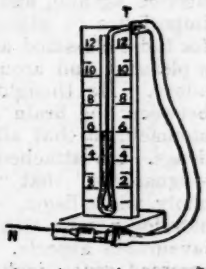
APPLIANCES AND PREPARATIONS.

A Standardized Reverdin Needle and Holder.

MR. VICTOR BONNEY (London, W.) writes: A drawback to all the present patterns of Reverdin's needle is that, as the needle is attached to the holder by a square fitment, it is impossible to standardize them so that any needle will fit any holder of the same type. This objection applies even to the otherwise ideal pattern designed by my late assistant, Mr. Arthur Woo. The Genito-urinary Company have therefore constructed for me a new pattern similar to the Woo pattern, but having a round fitment, so that every needle fits the holder without special adjustment, and when new ones are required it is not necessary to send the holder back to the makers to fit them. This is a great improvement, especially for surgeons living in the country or abroad. The round fitment, moreover, has this further advantage that it allows of the needle being moved in the holder into any position the surgeon desires, so that, for instance, he can adjust it for passing it "back-handed" if he wishes to. The needle is held in the holder by a "locking lever," as in the Woo pattern, rendering changing of the needle a matter of a few seconds. The holder and needle can be obtained not only from the Genito-urinary Company who make it, but from Messrs. Allen and Hanburys as well.

Portable Manometer for Intrapericardial Pressure.

Dr. G. ARBOUR STEPHENS (Swansea) has devised a portable manometer for estimating the intrapericardial pressure *post mortem*. He finds it useful as a ready test (even without opening the chest) of heart failure as a cause of death, for in all such cases the fluid does not move in the glass tube—that is, the intrapericardial pressure is atmospheric, whereas when the heart is normal the fluid is drawn up towards the bent top, T, of the tube to which the rubber tube is attached—that is, there is a suction action due to the negative intrapericardial pressure which in health keeps the lubricating pericardial fluid at an equal thickness all round the heart. This fluid tends to vary in quantity and quality, and this variation has a marked effect on the movements of the heart. When the heart beats rapidly as the result of exercise, there is an increase of the area of cardiac dullness, due, in his opinion, to an increased secretion of the pericardial fluid necessary for lubricating the more rapidly moving organ, and the distress experienced before second-wind is established is, he thinks, due to the process of producing the right amount of that lubrication. In those cases in which objection is raised to a *post-mortem* examination the aspirating needle, N, can be inserted at the inner end of the fourth left intercostal space, and passed directly downwards towards the heart and through the anterior portion of the pericardium.



THERAPEUTIC TENDENCIES.*

BY

CHARLES WHITBY, M.D.,

BATH.

In an old book given to me by a patient, *Culpeper's Last Legacy*, the sixth edition, dated 1680, that famous seventeenth-century practitioner has set forth his "Choicest Secrets" for the benefit of posterity. For the most part it is an olla podrida of prescriptions for ailments of every kind culled from various authorities, many of an outrageous, disgusting or obviously superstitious nature, and some frankly ludicrous. One of Culpeper's remedies for epistaxis is to "put a piece of hot hog's turd as it comes from the hog up the nose!" Another, derived from Mizaldus, is to write *consummatum est* on the patient's forehead with his own blood. "If any be troubled with stomach worms," observes our good Nicholas, "let him hold a piece of a honey-comb in his mouth, and the worms will come out to the honey."

Still, Nicholas was no quack; no fool, either. Many of his suggestions are quite sound. He was, of course, a famous herbalist; he was also an anatomist, who made his own animal dissections, and had no scruples about giving Galen the lie direct when he found his descriptions inaccurate. In this last book, having previously dealt with simples on the same lines, he devoted several chapters to a synopsis of the compound remedies in general use in his day—and some of them are still far from obsolete—in which these are methodically tabulated according to their supposed general or local effects.

At no period has the practice of medicine been wholly empirical; and it certainly was not so in Culpeper's time. Among the great array of his remedies, genuine or supposititious, no choice could be made without guiding principles of some sort. We find these clearly indicated in Part III of his *Last Legacy*, entitled "Aphorisms." From this it appears that all medicines may be classified as heating, cooling, drying or moistening in effect; and that each of these qualities may be subdivided into four degrees. For example, a fluid which by outward application caused burns or blisters would be called heating in the fourth degree, and as such unfit for internal administration. Pathological conditions are similarly classified as hot, cold, dry or moist; and the general principle seems to have been that the kind and degree of pathological deviation, local or general, was a guide to the appropriate remedy. Thus, a condition of heat and dryness of the second degree would indicate a remedy cooling and moistening in the same degree. A moist remedy would be one which caused a flux of any kind—a purgative, diuretic or diaphoretic; a dry one would be a local or general astringent.

In addition to this primary classification, remedies are grouped in accordance with their topical affinities—what we should call their organotropisms. Part IV of the *Last Legacy* is devoted to aphorisms intended to guide the physician in the choice of drugs adapted to particular organs—for example, "cephalicks," "pectorals," "cordials" (that is, cardiac remedies), "renals," "hystericals" (that is, uterine agents), and so forth. Culpeper attached some importance to odour as a guide to remedies, particularly for those classified as "cephalicks," most of which are of a pleasant and aromatic or else of a decidedly nauseous odour. He thought that there was a special relation between the brain and the uterus, the joints and the stomach, so that all are similarly affected by the same drugs. He attached some importance to the doctrine of "signatures," that "yellow purges choler, black melancholy, white flegm," and so forth. He was also a professed astrologer, who was careful to gather his herbs under favourable aspects. But his mysticism is tempered by common sense, just as his inert or crude drugs are prescribed with suitable adjuvants or correctives. Such, then, in brief outline, were Culpeper's guiding lights. It will be interesting to compare with them those which underlie distinctively modern methods.

Of these, let us consider first the group of remedies comprised under the term vaccine therapy, a method rescued from empiricism by Pasteur's epoch-making discovery of the rôle of the yeast plant in fermentation, and Davaine's identification of the anthrax bacillus. Like all great discoveries, this was but the bringing into clear light of a principle already adumbrated in the consciousness of mankind. The practice of inoculation for small-pox was begun in the early part of the eighteenth century, the famous Lady Mary Wortley Montagu having played a pioneer part in its popularization. When, in 1798, Edward Jenner, after twenty-five years' research, published his *Inquiry into the Causes and Effects of the Variolae Vaccinae*, the cruder form of prophylaxis was for some of his medical opponents a lucrative speciality. Jenner himself was led to investigate the subject by his frequent failure to inoculate with small-pox those of his country patients who had suffered from "cow-pox," and the discovery of a vague opinion among dairy folk that this was a preventive. It is the great principle of attenuation which is the foundation stone of vaccine therapy; and this stone was laid by Edward Jenner. I have searched Culpeper's book in vain for any evidence of awareness among seventeenth-century practitioners of the true nature of infection. In a section devoted to the Pestilence, he goes out of his way to combat the exaggerated terror of the disease, which in his day too often deprived sufferers of the services, not only of their neighbours, but even of a physician. He himself attributed the disease to a corrupted and unwholesome air caused by a malign conjunction of the superior planets. It is interesting, however, to find among Culpeper's prescriptions one recommending drachm doses of the desiccated and pulverized liver of a rabid dog as a remedy for the bite of such a dog. Also, there seems to be an anticipation of modern surgery in the strong recommendation of a linen cloth soaked in lime-water, prepared by pouring boiling water on quicklime in a clean new earthen vessel, as a dressing for wounds and ulcers. "This water," says Culpeper, "draws out the corruption of putrified sores. Mizaldus extols it to the skies."

The Jennerian method—that is to say, the introduction of pathogenic organisms in a living although attenuated state into the circulation—is not, of course, obsolete, but is, I think, in a fair way to become so. The awkward consequences that sometimes follow vaccination are, no doubt, in the majority of cases due to septic complications, but there must always be an element of uncertainty as to the behaviour of a living virus when introduced into a human organism. The modern tendency in vaccine therapy—a tendency accelerated, if not initiated, by the researches of Ehrlich and Almroth Wright—is to transform a biological and empirical into a chemical and truly rational method. These two distinguished men have approached the problem of the treatment of infective maladies the one from the chemical, the other from the biological point of view. Ehrlich's famous side-chain theory was an extension to the biological sphere of a hypothesis derived from the study of complex organic molecules, and was utilized by its inventor in an attempt to evolve an improved method of chemical treatment. Wright's opsonin theory was based on observation of the phenomena of infective and counter-infective processes, and is the basis of modern vaccine therapy. Yet the common aim of both investigations tends to a similar goal. In his recent investigations Wright has been drawn to inquire into the possibility of immunization *in vitro*, and deems it possible, "not only to test the efficiency of vaccines on normal blood *in vitro*, but also to determine upon the patient's blood *in vitro* what vaccine and what dose of that vaccine would give the desired effect." This clearly would be a close approximation to the ideal pharmacological method, especially in view of the fact that vaccines tend to conform to the chemical type of remedy, as isolated toxins of presumably definite and ascertainable composition. The term chemio-therapy calls to mind Ehrlich's epoch-making discovery of salvarsan (dioxydiamidoarsenobenzol dichlorhydrate), but the objective of his *therapia sterilisans* is, of course, achieved in a different way. With vaccines it is always an active immunity, due to exploitation of the latent phylactic resources of the patient, that is aimed at. Salvarsan is, by reason of its direct attack upon the spirochaete, comparable to an antibacterial serum, such, for example, as Yersin's bactericidal plague serum. This fact constitutes at once the strength and weakness of the method: on the one hand, the benefit is prompt and independent of the constitutional response of the patient; on the other hand, it is a merely quantitative effect, the

* Read before the Clinical Society of Bath on December 3rd, 1920.

number of spirochaetes rendered *hors de combat* is necessarily limited by the amount of "606" that can be brought to bear on them. The defensive process initiated or augmented by a vaccine bears no necessary proportion to the dose introduced; the effect is, it seems to me, qualitative rather than quantitative. On the other hand, as Wright himself admits, vaccine therapy is permissible only when the body is not already making its maximum immunizing response, and is also generally unsuccessful in presence of pyrexia and severe constitutional disturbances, unopened abscesses, and foul, discharging or sloughing wounds. It gives less favourable results in long-standing than recent infections. As between the direct attack of antibacterial or antitoxic serums upon the pathogenic organism or its toxins and the evocative action of vaccines the present therapeutic tendency is decidedly favourable to the latter method—that of active in preference to passive immunization.

It is an interesting, albeit somewhat speculative, question to ask how our views of drug therapy in general are being or are likely to be modified by the dominant conception of immunity. To some extent one can recognize a similar duality in the use of drugs to that involved in the distinction between vaccines and serums, active and passive immunity. "The whole ground of Physic," says Culpeper, "is comprehended in these two words, *Sympathy* and *Antipathy;* the one cures by strengthening the part of the body afflicted, the other by resisting the malady afflicting." Here, surely, are foreshadowed the two points of view which were later to split the profession into conflicting schools of thought. There is, however, nothing really incompatible in these two points of view; belief in the efficacy of Behring's serum does not preclude faith in that of anti-enteric vaccine. In a lecture delivered last year Sir Almroth Wright described experiments proving that "in response to inoculations of a staphylococcic vaccine the blood serum and lymph acquire bactericidal powers for both staphylococci and streptococci." In fact, it would seem that immunity is not, as has hitherto been thought, merely specific; inoculation may produce collateral as well as direct immunity. This conclusion suggests the questions whether something comparable to immunity be attainable by ordinary drugs, and whether the leaning towards vaccines rather than antitoxins—towards what Culpeper calls the method of "sympathy," of "strengthening the part afflicted"—be discernible in the wider field of modern medicine.

If, as can scarcely be questioned, the legitimate resources of drug therapy include the administration for curative purposes in medicinal doses of remedies capable of producing symptoms resembling those of the malady under treatment, it seems that the conditions of success must be approximately the same as those experimentally established in and for vaccine therapy. Such a method might appropriately be termed *synergic*, in distinction from the more widely applicable *corrective* medication, of which, say, the administration of a purge on general principles, of a dose of sulphonal or barbitone for insomnia, or of a combination of alkalis for acidosis, are examples. I have more than once observed symptoms suggestive of anaphylactic shock in endeavouring to push remedies like arsenic, and I am inclined to think that much better results might be obtained in drug treatment, and particularly with definitely organotropic remedies, by a modification of dosage and periodicity based on the assumption of the occurrence of a "negative phase" or period of diminished therapeutic susceptibility. It surely savours of crudity to jump straight to our maximum dose of such potent remedies as digitalis, nux vomica or strophanthus, and to give these for weeks together at intervals of three or four hours only, although when we push digitalis to clear up a dropsy we are after all using it correctively, not curatively.

Assuming that impaired nutrition is basic in most diseases, my suggestion is that a drug capable of acting as a physiological stimulus to a given organ will in smaller doses act as a *trophic* stimulus, and that such stimuli, if maintained long enough and never exceeded, will in some cases re-establish the normal nutrition and, consequently, the normal function. Further, that the maximum trophic effect will be produced by a dose just short of that productive of an appreciable physiological effect. This dose must not be regarded as a fixed quantity; as soon as tolerance of the original dose is established it should be cautiously increased. As regards the spacing of doses no fixed rule can be laid down, but it should be long enough to preclude such heaping up of the trophic effect as would result in functional stimulation. Thus the medicine may be given night and morning, or, in some cases, once daily or less. The common observation that a remedy continued too long "loses its effect," the facts of drug and tobacco tolerance, and the enormous quantity of alcohol that some people can take with apparent impunity, all suggest that the principle of immunity has wider application than is yet commonly realized.

A closely related subject is that of toxic idiopathies, particularly those which manifest themselves in the form of coryza and bronchial asthma. Dr. John Freeman in a recent lecture showed that abnormal sensitivity to foreign proteins, such as grass pollens and animal emanations—for example, from the horse, cow, or, above all, the cat—can be detected by the production of conjunctival or cuti-reactions. In bronchial asthma, which he regards as the result of the endotoxin of the microbe causing the bronchitis, the skin reaction can be produced by using a solution of this microbe. Food idiosyncrasies can be tested for in the same way. Hypersensitiveness to foreign proteins is, he finds, commonly a family trait, but is apt to take diverse forms in its different members. I have myself often noted the occurrence of a liability to hay fever, asthma, or urticaria in members of the same family, and sometimes alternating in the same person. With regard to food idiosyncrasies, Dr. Freeman suggests that where mothers insist on faddy children finishing up their meals they are probably immunizing them against slight hypersensitiveness of this kind. In this, as in many other respects, modern mothers might with advantage revert to the sturdier methods of their Victorian forebears.

The department of modern medicine, comprised under the terms organotherapy, opotherapy, or endocrinology, may, I think, best be characterized as a realm of great expectations. We hope much of it, but, except in the treatment of such rare diseases as myxoedema, mongolism, or scleroderma, it is difficult to point to notable achievements. Although regarded as a distinctively modern method, its origin is deeply rooted in antiquity. "Dry a Bullock's, Sheep's, or Goat's bladder," writes Culpeper, "and beat it into powder, and give a drachm of it in water, vinegar, or any convenient liquor to such as cannot hold their water or use to piss abed and it will help them." In another section he affirms that the internal skin of a hen's gizzard "helpeth concoction"—that is, digestion—exceedingly; "nothing like it" if given after meals. Also he asserts that "the Brains of a Weazel dried and drunk in vinegar cures the Falling sickness." In a recent paper on the nervous system and the endocrine glands, Dr. Sybil Welsh suggests that below the level of the most simple type of nervous stimulus there is a set of systems of chemical control, aiding the co-ordination of the processes of nutrition, growth, and reproduction. In spite of the valuable work of Blair Bell and others, our knowledge of the mutual dependencies and reciprocal actions of the endocrine glands, and even of their individual effects, is still inadequate for confident generalization as to their therapeutic rôles. We are as yet mainly confined to the phase of empirical gleaning. The available secretions may be used in one of six ways: (1) diagnostically, to determine whether symptoms be due to excess or deficiency; (2) to compensate for a deficiency; (3) homo-stimulatively; (4) hetero-stimulatively—for example, in giving thyroid to promote ovarian secretion; (5) to inhibit excessive activity, as in the use of mammary extract to diminish ovarian activity; and (6) physiologically and occasionally, as in the use of adrenaline as a haemostatic or pituitrin to facilitate parturition. Of these six methods, by far the commonest and, so far, the most successful, are the second, of which thyroid feeding is a familiar example, and the last. It is in the exploitation of the homo- and hetero-stimulative and also of the inhibitory potentialities of endocrine remedies that the lack of adequate guidance is at present most evident. The treatment by pituitrin injections of uterine inertia, previously the commonest of indications for forceps delivery, is in my opinion the greatest advance made in obstetric practice for the past quarter of a century. I have been favourably impressed by the effects of parathyroid extract in cases of epilepsy. In one case of twenty-five years' standing the patient has been able to discontinue entirely the large doses of bromide she had been

taking for many years, and the seizures, although not entirely checked, are milder and followed by less mental disturbance. This drug is worth trying also in paralysis agitans, chorea, and the tremor of "shell-shock." Thymus gland extract is indicated in cases of rachitis and infantile marasmus, and is said to have cured some cases of carcinoma. Pineal gland is recommended for children of backward mentality, also for premature mental failure. Cases of genital infantilism in girls and young women are benefited by ovarian feeding, also some cases of hysteria and painful menstruation. Extracts of the corpora lutea are said to alleviate the psycho-neurosis of the natural or artificial menopause, and of pregnancy, and to diminish the risk of abortion. Mammary gland extract is indicated in those forms of menorrhagia, metrorrhagia and hysteria which are attributable to excessive activity of the ovaries, and will sometimes check the growth of uterine fibromyomata.

One frequently sees cases in which girls and women show considerable enlargement of the thyroid gland without any of the recognized symptoms of cretinism on the one hand or of Graves's disease on the other. Whatever the explanation, such patients are often benefited by the cautious administration of thyroid extract. Some years ago Maranon published the observation that in 87 per cent. of cases of hyperthyroidism slight friction of the skin of the neck, near or over the gland, readily produces an erythema, sometimes accompanied by swelling. If this test be reliable, hyperthyroidism is the exception in the numerous cases of thyroid enlargement I have seen recently. It may well be that perverted rather than merely excessive or decreased activity is the commonest concomitant of such enlargement.

To sum up, it may be said that, while the note of mastery which distinguishes modern surgery is still to seek in medicine, there are signs of a growing intimacy of touch and sureness of method. The prognosis is good.

VOLUNTARY HOSPITAL FINANCE.

INTERIM REPORT OF THE MINISTRY OF HEALTH COMMITTEE.

THE Committee appointed by the Minister of Health on January 25th, under the chairmanship of Viscount Cave, "to consider the present financial position of voluntary hospitals, and to make recommendations as to any action which should be taken to assist them," has made an interim report dated March 9th.

CONTRIBUTIONS BY APPROVED SOCIETIES.

The Committee states that the evidence already received has convinced it "that it is desirable, in the public interest, to maintain the voluntary system of hospital management, and also that—mainly owing to the large increase during and since the war of salaries and wages and the cost of provisions and materials—many of the hospitals are faced with a serious deficiency of income to meet necessary expenditure." The Committee intends in due course to make further recommendations, but its interim report is issued in order to deal with a pressing matter—namely, the propriety of the approved societies making contributions. The following is the text of the paragraphs dealing with this matter:

We understand that the quinquennial valuation of approved societies under the National Health Insurance Acts, which is now in hand, shows a considerable surplus over the amounts required for the purposes of the Acts. Excluding Ireland, the valuation of 4,926 societies and branches, containing 2,558,123 members (out of a total of approximately 10,000 societies and branches containing nearly 15,000,000 members), which had been completed on December 24th last, showed a total disposable surplus as at December 31st, 1918, of £2,171,576; and it is anticipated that when the valuation is completed the total disposable surplus of all the approved societies will not be less than £7,000,000. This result is attributed to a material extent to conditions arising out of the war, such as the reduction, owing to war conditions, of sickness, disablement, and maternity claims, and the release of reserves in respect of members killed on active service.

Under the provisions of the Acts the societies are empowered to submit to the Minister of Health for approval schemes for utilizing the disposable surplus in providing additional benefits during the next five years; and the list of additional benefits authorized by the Acts and the Regulations made thereunder includes, besides such matters as increase of sickness, disablement, and maternity benefits, and the provision of dental treatment, the "payment of the whole or any part of the cost of the maintenance and treatment of members in a hospital or convalescent home."

We are strongly of opinion that, in the interests both of the hospitals and of the societies, the schemes to be approved should provide for the application of a substantial part of the disposable surplus in providing a contribution towards the cost of the maintenance of members in hospitals. It will not, we think, be denied that the work of the voluntary hospitals is of great value to the approved societies and their members. Of the patients treated at the hospitals a considerable portion, about 30 per cent. of the out-patients and a larger percentage of the in-patients, are insured persons, and the effect of hospital treatment is not only to relieve these patients from suffering, but also to reduce the periods during which they are a charge upon the insurance funds. The fact that while depleting the hospital funds the war has had the effect of greatly increasing the surplus available to the approved societies, seems to provide a special reason for the consideration by the societies of the claims of the hospitals. The power given to the societies by Section 21 of the 1911 Act to subscribe to hospitals has been little used, doubtless owing to the anxiety of those concerned in the management of societies that their resources shall be sufficient to meet all claims; but now that a surplus is in sight it seems probable that a different view will be taken.

The method which should be adopted in order to secure the above result requires some consideration. The contribution of an approved society might take the form either of a weekly payment towards the cost of the maintenance of any member of the society who might become an in-patient in a voluntary hospital, or of a quarterly or yearly subscription for the benefit of the hospital or hospitals concerned; but in the latter case some amendment of the regulations would appear to be required. In either case an arrangement might (if so desired) be made with the hospitals for relieving the members of the society from any obligation to make further payments in respect of their maintenance or treatment.

We have reason to believe that some of the largest approved societies would be glad to see these proposals generally accepted, and that the hospitals would welcome such a result.

We are aware that it is not the desire of the Ministry of Health to interfere unnecessarily with the schemes submitted by the different societies for the utilization of their surplus funds. But we are confident that if the proposals here made were brought to the notice of the members the general feeling would be in favour of providing this measure of assistance to the hospitals, and so of making some return for the great benefits which those institutions have so long and so generously conferred upon them.

We therefore recommend that the Ministry

(1) should make any necessary amendment in the regulation;

(2) should forthwith bring this matter to the notice of the societies concerned and advise them as to the amount of the contributions which might reasonably be made out of the available surplus; and

(3) should not approve any scheme for the disposal of a surplus until the suggestion has received due consideration.

We should have preferred to include these recommendations in our general report, so that their relation to other parts of the report might be seen; but we understand that the matter is urgent, as some of the societies are now engaged in framing schemes under the Act.

The report is signed by all the members of the Committee—Viscount Cave, the Marquis of Linlithgow, Sir Clarenden Hyde, Sir W. B. Peat, Mr. Vernon Hartshorn, M.P., and Mr. R. C. Norman.

A SMALL epidemic of small-pox has recently occurred at Chicago, being apparently due to a case being mistaken for varicella. Up to December 116 cases had been notified.

The second International Congress of Eugenics will be held in New York from September 22nd to 28th. Further information can be obtained from the Secretary, Dr. C. Little, American Museum of Natural History, 77th Street, New York City.

THE mortality from tuberculosis in Austria has considerably increased during the last few years. Before the war it was on the decline, the number of deaths from this cause in Vienna among women being 2,635 in 1914. During the war this figure began to increase, and is now 5,018. The mortality is highest between 35 and 65.

British Medical Journal.

SATURDAY, MARCH 26TH, 1921.

MUNICIPAL MEDICINE.

IT is generally recognized that the extension of plans for the municipal treatment of certain classes of patient and certain kinds of disease is a matter of serious moment to the private practitioner. We have seen the institution of medical inspection of school children, then of a tuberculosis medical service, followed by maternity and child welfare centres, and recently by venereal disease clinics. Still more recently proposals for the establishment of municipal hospitals, some of which have been carried out, have afforded further evidence of the trend of municipal enterprise and have convinced the general profession of the need of watching developments very closely.

All these matters have for some time past been under the consideration of various committees of the British Medical Association, and on March 16th a conference of these committees was held in order that the present situation might be discussed from all points of view. The conference was by invitation attended by some representatives of the medical officers of health. The hope that in this way some basis of understanding might be reached was not disappointed, and the conference at an early stage affirmed its desire to find some means of reconciling the difference between medical officers employed in municipal clinics and municipal hospitals on the one hand, and private practitioners in certain areas on the other. After this gratifying exhibition of professional solidarity the conference proceeded to the discussion of details, but though it sat for some four hours, it did not reach the hospital question. With regard to clinics, however, the ground was to some extent cleared. The desire of the representatives of clinical medicine in the committees of the British Medical Association was that the clinical work of clinics should be carried out by private practitioners. Many, perhaps the majority of medical officers of health, have preferred that clinics should be conducted by whole-time officers, who will be more directly under their personal control; and municipalities have been moved to take the same view on the ground of economy, since they believe that the whole-time officer would not cost so much as a rota of practitioners. A resolution, however, was adopted at the conference, moved by a member of the staff of a voluntary hospital, and seconded by the medical officer of health of a large urban district, to the effect that clinical work done for a public health authority should, wherever possible, be carried out through the agency of private practitioners, subject to conditions to be agreed upon.

The remainder of the time of the conference was mainly given to a discussion with regard to the medical inspection of school children. It was agreed that the wise and proper course for a local authority to take was to invite local practitioners to submit a scheme for giving advice and treatment at school clinics and also at maternity and infant welfare centres; it was agreed also that specialist treatment in such clinics should be given by part-time specialists. Both these recommendations were qualified by the phrase "if possible." It is, of course, plain that the method is possible; it is followed in some other countries; the chief objection to it in this country would appear to be the risk of some extra expenditure. A further principle agreed upon was that those responsible for medical inspection ought not to refer a case to the clinic direct should the patient have a private practitioner or be willing to consult one. On the other hand, it was agreed that practitioners of the area ought to have the right themselves to refer cases to the school medical officer for treatment.

The near resemblance that may be traced between the recommendations of the Medical Consultative Council of the Ministry of Health with regard to clinics, and the decisions of the conference last week on the same subject, gives good ground for believing that they express the considered views of the profession. We shall hope for further guidance on the hospital question, for it is important that its professional aspects should be thoroughly considered and the opinion of the profession presented to the public, as far as may be possible, simultaneously with the final report of the Voluntary Hospitals Committee appointed by the Minister of Health under the chairmanship of Lord Cave. We give elsewhere the text of the operative clauses in the interim report of this Committee. It will be seen that the members reached the unanimous conclusion that it is desirable in the public interest to maintain the voluntary hospital system of management. In expressing this view the Committee is in agreement with the British Hospitals Association, with King Edward's Hospital Fund for London, and, we believe, with the majority of the medical profession.

While it is recognized that it is undesirable that general hospitals should be converted into municipal or state institutions, thereby losing the advantages of voluntary administration and control, the necessity for finding additional sources of income is equally generally admitted. Lord Cave's committee makes a definite recommendation—namely, that in the interest both of the hospitals and of the approved societies a substantial part of the large surplus funds held by those societies should be used to provide contributions towards the cost of the maintenance of their members when in hospital. The total disposable surplus of the approved societies at the end of 1918 will, it is believed, when the valuation is completed, prove to be not less than seven millions. The Committee estimates that of persons treated at the hospitals, about 30 per cent. of the out-patients and a larger percentage of the in-patients are insured persons; the effect of hospital treatment is not only to relieve the patients from suffering and disability, but also to reduce the periods during which they are charged upon the insurance funds. The war, while depleting the hospital funds, has had the effect of greatly increasing the surplus available to the approved societies, and this would seem a special reason why the societies should give consideration to the claims of the hospitals. Section 21 of the Insurance Act, 1911, gave power to an approved society to grant subscriptions or donations to hospitals; it appears that this power has been little used. Lord Cave's committee has reason to believe that some of the larger approved societies would be glad to help the hospitals, and mentions two alternative methods: either the approved society might make a weekly payment towards the cost of the maintenance of any member who is an in-patient, or it might make a quarterly or yearly subscription to the hospital. The choice of method will require careful consideration, and is a matter upon which the medical profession will undoubtedly wish its opinion to be heard.

SPLENECTOMY IN PERNICIOUS ANAEMIA.

AMONG the numerous methods of treatment proposed and practised for pernicious anaemia the most heroic is splenectomy. It was introduced about ten years ago, and, although never popular in this country, it has not entirely escaped attention, for in 1914 Thursfield and Gow,[1] in an analysis of 21 cases collected from the literature, 11 being from Mühsam's clinic, showed that the red blood count was increased in all; with full recognition of the natural tendency of the disease to show remissions, they conclude that the operation afforded a fair promise of prolonging life, and even of making possible an active existence, at any rate for a time. In 1917 L. B. Wilson and Giffin[2] reported 7 cases at the Mayo clinic with temporary improvement; and in 1917 Giffin,[3] in bringing this number up to 31, stated that there was a well marked favourable reaction in 78 per cent. of the patients who recovered from the operation, the immediate mortality of which was very low; most of the cases were so recent that no conclusions as to the duration of post-operative survival could be then drawn.

Giffin and Szlapka[4] have now published a report on 50 cases, including the 31 mentioned above, in which the operation had been performed more than three years previously. The immediate operative mortality was 3 (or 6 per cent.), and, though higher than in chronic splenomegalic haemolytic jaundice, was considerably lower than in chronic splenic anaemia. Out of the 47 patients 42 have now succumbed, but 10 survived for more than three years, and 5 of these were alive and well in November, 1920, with an average of six years' illness, and an average interval since operation of four and a half years; the average total duration of the disease in the 10 cases was four and a half years, or longer than the average expectation of life (two to three years) in pernicious anaemia, and hence it is concluded that splenectomy prolonged life in 20 per cent. of the 50 cases. Estimation of bile pigments in the duodenal contents by a modification of Schneider's method suggested that haemolysis is less after than before operation, and there was some reason to believe that after splenectomy the progress of spinal cord changes was less rapid than would have been anticipated. Splenectomy appears to stimulate the bone marrow, for large showers of nucleated red cells may appear in the blood; but this is not an infallible index of the patient's post-operative progress, for several of the most successful cases showed few nucleated reds and only slight leucocytosis. The cases were selected from patients between 35 and 45 years of age, with a history of a year or less of illness, a favourable blood picture, namely, a polymorphonuclear rather than a lymphocytic predominance, absence of well-marked leucopenia, and with little if any evidence of degeneration of the spinal cord. But the writers finally conclude that there are not any features of the disease that can be relied on to indicate a favourable result from splenectomy, though cases with signs of acute haemolysis show a more pronounced immediate improvement after operation.

In contrast to this surgical estimate of the effect of splenectomy Bloomfield's critical analysis of 57 cases of pernicious anaemia treated in various ways at the Johns Hopkins Hospital may be recalled[5]; he found no definite evidence that transfusion of blood (26 cases), splenectomy, or elimination of focal infections prolonged life. By that time (1918) splenectomy had been abandoned at the Johns Hopkins Hospital, 6 out of 8 cases having terminated fatally without clinical improvement or prolongation of life in any instance. In five of the cases transfusion of blood was performed after splenectomy, but there was not any proof that the transfusion "held" any better after removal of the spleen. Bloomfield's figures of splenectomy are much smaller than Giffin's, but they were controlled by other series of cases treated in other ways, and thus are valuable.

[1] Thursfield and Gow: *St. Bartholomew's Hosp. Rep.*, 1914, l, 26.
[2] Wilson and Giffin: *Ann. Surg.*, 1915, lxii, 158.
[3] Giffin: *Journ. Amer. Med. Assoc.*, Chicago, 1917, lxviii, 429.
[4] Giffin and Szlapka: *Journ. Amer. Med. Assoc.*, Chicago, 1921, lxxvi, 290.
[5] See BRITISH MEDICAL JOURNAL, 1918, ii, 63.

THE NEW TUBERCULOSIS BILL.

THE National Insurance Act, 1911, required Insurance Committees to make arrangements to the satisfaction of the Insurance Commissioners (now of the Ministry of Health) for providing treatment in sanatoriums or other institutions, for insured persons suffering from tuberculosis; and powers were given to the Committees to extend this benefit, if considered desirable, to the dependants of insured persons. The Act had not been in force very long before it became apparent that if the best results were to be obtained those persons who were not insured would also have to be considered. The Government accordingly undertook to provide out of national funds one-half of the net expenditure incurred by county councils and county borough councils in connexion with those tuberculosis schemes which included provisions making them available for the entire population; we believe we are right in stating that at the present time there are only two or three of these authorities whose schemes have not been approved, and that the Ministry of Health withholds approval from any scheme which does not provide for the non-insured equally with the insured. As there seemed no longer any justification for differentiating between insured persons and non-insured persons, opportunity was taken in the National Health Insurance Act, 1920, to provide that sanatorium benefit, except in the case of Ireland, should no longer be included in the benefits conferred by the National Insurance Act of 1911, and after April 30th next this special benefit to insured persons ceases. This means that insured persons who are tuberculous will be entitled to appropriate treatment not because they are insured but because they are tuberculous. In those districts in which satisfactory arrangements for treatment have not been made by the county council or county borough council the inhabitants, after April 30th, will be placed at a disadvantage compared with those living in other parts of the country where the local authorities have had a fuller sense of their responsibilities. With the object of removing this disability in England and Wales, Dr. Addison, on March 16th, introduced the Public Health (Tuberculosis) Bill into the House of Commons. This measure lays down that adequate arrangements for the treatment of tuberculosis shall be considered to have been made by a county council or county borough council if the scheme for carrying out such treatment has received the approval of the Local Government Board, the Minister of Health, or the Welsh Insurance Commissioners. But in those cases in which a council has failed to make adequate arrangements for such treatment the Minister of Health may do what is required, after giving the council in question an opportunity of being heard on the matter. The cost of establishing and carrying out a scheme of the Ministry of Health is to be borne by the council concerned. Although the main object of this bill is similar to that embodied in the bill presented by Dr. Addison in November, 1920, and subsequently withdrawn, it differs in some material respects. For example, the bill of 1920 empowered county councils, county borough councils, and the Metropolitan Asylums Board to provide and maintain

village settlements. It also enabled county councils, county borough councils, and metropolitan borough councils to engage in propaganda work relating to the prevention and treatment of tuberculosis and to contribute to the expenses of voluntary bodies established for the purpose of assisting persons suffering from tuberculosis or their families. These enabling clauses are not in the present bill, but a new clause has been inserted empowering the Minister of Health to give conditional approval of an institution for the treatment of tuberculosis or to withdraw his approval altogether. A very useful provision in the new bill is that which enables county councils and county borough councils to delegate their powers in relation to the treatment of tuberculosis to a committee upon which there may be appointed, either by the council or by the committee itself, persons who are not members of the council but who are specially qualified by training or experience in matters relating to tuberculosis. Two-thirds of the members of the committee must, however, be members of the council. The National Insurance Act, 1911, in Section 64 (3) made provision for establishing through an Order of the Local Government Board a joint committee from county councils, county borough councils, and other local authorities, except Poor Law authorities, for the purpose of providing sanatoriums and other institutions. This subsection is repealed in the present Tuberculosis Bill, and there is substituted for it a clause through which such a joint committee can only be formed from county councils and county borough councils. There can therefore be no co-operation between any local authorities other than these bodies, and in some quarters this will be looked upon as a distinct defect in a measure which in other respects calls for no adverse criticism.

THE MANCHESTER RADIUM INSTITUTE.

THE annual report of the Manchester and District Radium Institute, compiled by Dr. Arthur Burrows, radiologist, states that the number of patients applying for treatment during 1920 was 834, or 157 more than in the previous year; of these patients, 552 were suffering from malignant disease. Sixty-five cases of carcinoma were rendered free from signs and symptoms of the disease during the year; the organs affected were: the breast in 7 cases, the cervix of the uterus in 32, the larynx in 1, the lip in 3, the mouth and tongue in 5, the nose in 2, and the skin in 15. The number of rodent ulcers treated was 100, and of these 45 were cured. The number of cases of carcinoma of the cervix of the uterus seen during the year was 128; 3 were found unsuitable for treatment, 1 died, 8 were not improved, 29 abandoned treatment too early, 51 were improved, and, as already stated, 32 were well at the end of the year. The total is made up by 4 cases submitted to prophylactic radiation. The question whether the use of radium can replace operation in the treatment of early carcinoma in this situation is not yet decided, but the future is considered to be promising. Although the methods employed in the early years of the Institute were not as efficient as at present, a number of cases regarded at the time as inoperable and treated by radium were alive and well five, four, and three years later. During 1920 six cases classified as improved were regarded as inoperable before radium treatment was applied; they have since been operated upon. Appended to the report is a reprint of an article communicated by Dr. Fletcher Shaw and Dr. Burrows to the Section of Gynaecology of the Royal Society of Medicine on the use of radium to render possible hysterectomy for advanced carcinoma of the cervix; an account of this article was published in our columns of June 12th last, p. 806, and it was noted that during the discussion which followed its reading the opinion was expressed that it might be proper to operate on the second day after the completion of the exposure to radium; that is to say, at a time when the destructive action of the emanation on the malignant cells has been completed, and the hard fibrous tissue, which at operation later on may make dissection difficult, has not yet been formed. The report now before us states that recently some operable cases had been given doses of radium, and the uterus removed three days later, but we do not find that the final result is stated. Of 86 cases of cancer of the mouth and tongue which applied for treatment, 3 received prophylactic radiation only, 17 were found unsuitable for treatment and 15 abandoned it too early, 5 cases died, and 9 were not improved; 32 were improved and 5 were well at the end of the year. Among the cases returned as improved was a considerable number in which the primary growth of the mouth had disappeared, but secondary glands were still present in the neck. The problem of secondary deposits still remains, it is said, the most difficult factor in dealing with cases of carcinoma of the mouth. Among the patients suffering from non-malignant disease were 54 cases of exophthalmic goitre; of these, 3 were deemed unsuitable for radium treatment, 10 did not persevere with it, 2 were not improved, 1 died, 37 improved, and 1 was well at the end of the year. A long period must be allowed to elapse before any definite opinion can be expressed. In a paper read to the Electro-therapeutic Section of the Royal Society of Medicine by Dr. Burrows and Mr. Woodburn Morison in March, 1920, the opinion was expressed that no other treatment gave such safe, uniform, and promising results as irradiation of the thyroid gland. In view of the alarming accounts of grave anaemia resulting from the handling of radium for therapeutic purposes, Dr. G. E. Loveday made some examinations of members of the staff of the Manchester Institute; at present the results are incomplete, but the inquiry will be continued. A new building provided with beds will be taken into use by the Institute this year.

CONGRESS OF RADIOLOGY AND PHYSIOTHERAPY.

THE forthcoming Congress of Radiology and Physiotherapy, organized by the Electro-therapeutic Section of the Royal Society of Medicine and the British Association of Radiology and Physiotherapy, will be held in London on Thursday, Friday and Saturday, April 14, 15th, and 16th, 1921, under the presidency of Sir Humphry Rolleston, K.C.B. The Congress will open at 10 a.m. on April 14th at the Royal Society of Medicine. On each day there will be papers and discussions in each of the three Sections—A, Radiology; B, Electrology; and C, Physiotherapy. On the morning of April 14th, Section A will discuss diseases of bone, Section B the action of the direct (constant) current on the tissues in health and disease, and in Section C there will be addresses on physical training and on the Chartered Society of Massage and Medical Gymnastics. In the afternoon Section A will meet at St. Bartholomew's Hospital; papers will be read on the intraperitoneal injection of oxygen, and visits will be paid to radiographic departments of selected hospitals. Members of Section B will visit the electrical departments of selected hospitals, and Section C will discuss the treatment of cardiac disorders by physical means. On April 15th Section A will discuss the normal stomach, Section B the uses of electrical methods in the diagnosis and prognosis of paralysis, and Section C physical treatment as an aid to orthopaedic surgery. In the afternoon Section A will discuss the abnormal stomach, and Sections B and C will meet for a joint discussion on re-education of muscles. On April 16th Section A will discuss deep therapy and radium therapy, Section B the physiological action and therapeutic uses of high frequency currents, and Section C backache and referred pain. In connexion with the Congress there will be an exhibition of *x*-ray and electrical apparatus, a dinner, visits to the Universities of Oxford and Cambridge, and a demonstration of physical training, organized by the Ling Association, at the Royal Albert

Hall on April 16th, at 2.30 p.m. Representatives from France and Belgium will take part in the proceedings, and communications may be made in French or English. The Secretary-General is Dr. G. Harrison Orton, and the Honorary Treasurer, Dr. J. Metcalfe, to whom subscriptions (2 guineas for English members and 40 francs for French and Belgian members) should be forwarded at the Royal Society of Medicine (1, Wimpole Street, London, W. 1).

THE MEDICINE OF ANCIENT EGYPT.

PROFESSOR ELLIOT SMITH read an interesting paper on the ancient medicine of Egypt before the Section of the History of Medicine of the Royal Society of Medicine on March 16th. In the whole of its history, he said, medicine had been drawing upon knowledge not primarily acquired for the diagnosis and treatment of disease; and the further back into history inquiry was pushed, the more striking did this fact appear. Egypt occupied an important place in the beginnings of medicine. The elaborate methods followed for the preservation of bodies made it possible to ascertain the nature of some of the disorders from which the individuals had suffered during life. The practice of mummification itself had a far-reaching effect in acquainting men with the nature of materials that would preserve the body, and certain of these materials, such as balsams, were used later on as therapeutic agents. Among the numerous photographs exhibited was one of a fractured jaw revealing a blood stain after twenty centuries. So wonderful was the preservation of the bodies that even the contents of the alimentary canal could be examined. In the stomachs of small children the remains of a mouse were often found. The custom of giving a mouse as a remedy to children *in extremis* was mentioned by Pliny, and had its echo in our own time when, in some parts of the country, the mouse was thought to have healing properties—a striking instance of the persistence of custom through long ages. The idea of the mouse as a life-giver was probably associated with the fact that after the inundations of the Nile mice appeared in great numbers, and it was a belief firmly maintained by the Egyptians that they were formed of Nile mud, the substance of the life-giving god. The fundamental principle underlying the practice of medicine in Egypt was that illness was due to deficiency of vital substance, and that, therefore, the rational method was to give to the patient an additional dose of such substance. Blood was regarded as the substance of life, and if blood was not given in illness, red ochre or some red-coloured substance was substituted. Butter, which was often found in the mouths of mummies, was supposed to perpetuate existence by drawing upon the life-giving properties of the cow. Lotus flowers and other plants were used in the same way, and although the great majority possessed no therapeutic properties, some came to be used as drugs, and their use continued even into modern times. Professor Elliot Smith next showed photographs of splints of the pyramid age, and remarked that the same type existed in Abyssinia to-day. Sculptures had been discovered showing that the operation of circumcision or some simpler form of incision was practised in the earliest beginnings of Egyptian history. Other sculptures showed that patients were massaged, though with what object was not clear. The Egyptians never put the knowledge of dissection, acquired by embalming, to any practical use in medicine, but they made it possible for the Greek physicians of about 300 B.C. to practise dissection in Alexandria, a practice forbidden by popular prejudice in Greece itself. In the bodies of many persons of over 30 years of age found in pre-dynastic cemeteries there was evidence of arthritis in various stages. Several photographs showing extensive mastoid disease were exhibited. Another series showed tuberculous disease of the spine with unmistakable evidences of psoas abscess. At the time he began his investigations in Egypt certain French observers had expressed the view that the appearances seen in bones from some pre-dynastic bodies were due to syphilis. His own examination of the specimens, however, showed that the damage to the bones had been inflicted by beetles after death. Altogether, with his collaborators, he had examined some 40,000 bodies in every part of the Nile valley belonging to every period of Egyptian history; in no single case was evidence of syphilis detected. He had found no evidence that trephining was practised in ancient Egypt, although the operation was performed in other parts of North Africa. The point was illustrated by a photograph showing a depressed fracture in the process of healing, which had erroneously been supposed to be an example of trephining. Skulls from the period when heavy full-bottomed wigs were worn showed characteristic thinning symmetrically disposed on the parietal bones. In the early Christian period one example of leprosy and one of gout had been found among aliens from Syria, but none of either disease at earlier dates. In concluding his lecture, Professor Elliot Smith recalled that Herodotus had stated that the bodies of women were not mummified immediately, as in the case of men, but were kept for a few days. This statement was confirmed by finding flies and larvae embedded in the resinous material used in the process of preservation.

BIRTHS, MARRIAGES, AND DEATHS.

THE Registrar-General's quarterly return for England and Wales shows that the births registered in the fourth quarter of 1920 numbered 208,380, being 21,500 fewer than in the preceding three months, and 15,200 fewer than in the corresponding quarter of 1919. The registered deaths were 115,603, being some 21,900 more than in the preceding three months, and 843 more than in the corresponding quarter of 1919. The births corresponded to an annual rate of 22 per 1,000 total population; the deaths to an annual rate of 12.5. Influenza was said to be either the primary or a contributory cause in 1,396 deaths, or 1.2 per cent. of the total deaths registered. There was no fatal case of small-pox. Infant mortality, measured by the proportion of deaths under 1 year to registered births, was equal to 85 per 1,000, being 19 per 1,000 below the average of the ten preceding fourth quarters. While the mean temperature for the quarter was above the normal in all districts, the total rainfall was everywhere below the normal, and throughout the greater part of the country the mean daily amount of sunshine was above the normal. As has already been indicated in the Registrar-General's provisional return,[1] the numbers of births and marriages in England and Wales during 1920 were the highest ever recorded, while the number of deaths was the lowest since 1862, when the population was about 20 millions. The natural increase of population (by excess of births over deaths) was not far short of half a million in 1920, and this also was the greatest on record. To make a bumper year complete, the marriage rate was higher and the total death rate and the infant mortality were lower than in any other year on record. Even the birth rate had something to be proud of, being the highest since 1909.

CANCER AND THE PUBLIC.

WHEN the lay press takes to the discussion of medical problems, as it does from time to time, the journalistic efforts are generally ludicrous and often pathetic. Of all the problems there is none more appealing to the excitable young journalist than that of cancer. Here he can dwell on "the mysteries that baffle our greatest scientists," or animadvert on the conservatism or worse of our doctors, who are sitting with folded and nerveless hands, incompetent to stay the awful scourge. Unaware of what is known and what is being done, he too often assumes that the whole subject is hid in impenetrable darkness, and that it is his duty to stir up a lethargic profession. He may

[1] BRITISH MEDICAL JOURNAL, January 29th, 1921, p. 178.

even tell us sometimes how to set about the solution. From the foreign correspondents of the daily journals we learn, at one time, that some savant has found the cause of cancer; at another, that a second savant, of whose name and existence we were ignorant, had hit upon the cure. Some newspapers, indeed, leave the subject severely alone, but in these days, when the man in the street clamours for a simple exposition of Einstein's theory, and problems in biology are freely discussed, it is to be expected that the public may reasonably demand a stocktaking of the knowledge that has been gained in the study of malignant disease, for there can be few families in this country in which some member has not died of cancer. It is unfortunate, however, that the writers who take it upon themselves to instruct the interested public are seldom in a position to know the facts of the case. Recently there has been something like an epidemic of "stunt" articles, and the alleged increase in cancer mortality in England and Wales as disclosed by the Registrar-General's report has formed the text for a mass of pseudo-scientific nonsense. It is admittedly difficult to treat the questions adequately in short compass or in popular language, and some of our laboratory experts object to having their plants so frequently pulled up to display the roots. Amongst these newspaper articles on cancer we have noticed one which should serve as a model to the journalist. The writer of an article in the *Evening Standard* of March 16th, discussing the question of the increase of cancer, gives ten facts known about malignant disease which it is of advantage to the public to know. Whoever the writer may be he knows the subject, and has the ability to put the position clearly in few words, and we gladly congratulate the newspaper on the article. *Si sic omnes!*

IMPORTED SMALL-POX.

We are indebted to Dr. D. S. Davies, M.O.H. Bristol, for a copy of his report on a recent outbreak of small-pox in that city. As on several previous occasions during the last thirty years in Bristol, the first case was a man engaged in unloading ships. This man, a dock labourer, had been working in three ships at Avonmouth between November 16th and December 22nd. It seems probable that he contracted the disease from infected sacks, as one of the vessels came from an infected Rumanian port. Some time in December he apparently developed a mild attack of small-pox, which did not cause him to be absent from work for more than four days. He had been vaccinated in infancy and showed three marks. On January 22nd a medical examination revealed the presence under the thick skin of the sole of one undoubted deep-seated pustule. He communicated the disease to his wife and son, and, so far as is known, to them only. The wife, who had been vaccinated in infancy and showed four good scars, sickened on January 2nd, developed a modified discrete eruption on January 4th, and had secondary fever. The son, aged 5, unvaccinated, sickened on January 2nd, and had the eruption on January 4th; it was a semi-confluent attack, becoming haemorrhagic in the pustular stage, and the child died on January 12th. The other child of the family, a daughter aged 2, who had been vaccinated in 1920 in order to qualify for a baby show, though equally exposed to infection, has remained in perfect health. There had been no small-pox in Bristol since 1915, and the nature of these two cases was at first overlooked, and they were not notified until January 8th. Between January 2nd and January 8th twelve persons visited the house; one, a woman aged 36, who had been vaccinated in infancy, nursed the patients daily, and was revaccinated on January 9th; on January 17th she had fever, and an eruption on January 19th. Her daughter, a girl aged 8, unvaccinated, visited her mother on January 5th; she was vaccinated on January 9th, and had fever on January 16th, and the eruption on January 18th. A domestic servant, aged 24, a sister of the woman who nursed the child that died, was another visitor; she had not been vaccinated in infancy but was vaccinated on January 10th; she had fever on January 17th and the eruption on January 19th. Another woman, aged 23, sister of the last named, unvaccinated in infancy and vaccinated on January 10th, also visited the cases; she developed fever on January 17th, and the eruption on January 20th. All these patients recovered. The eight other persons who visited the house escaped infection. In spite of the delay mentioned subsequent cases were, it will be noted, entirely limited to "home-contacts." The incident illustrates the value of informed supervision. In 1903 there were fifteen introductions of small-pox, and in nine of these no resulting case followed, nor in any instance did more than ten cases result. To maintain such control requires experience coupled with much work, the necessity for which might be avoided by the simple expedient of vaccination.

CONGRESS OF MILITARY MEDICINE.

We announced some time ago that the Belgian Army Medical Service was organizing an international congress of military medicine and pharmacy. This will be held at Brussels from July 15th to the 20th next, under the presidency of Dr. Wibin, Inspector-General of the Belgian Army Medical Service. The following subjects will be under consideration: (1) The general organization of army medical services and their relations with Red Cross societies; (2) clinical and therapeutic study of poison gases used during the war by the Central Empires, the results of their action upon the body and their influence upon the pensioned soldier; (3) the antituberculosis and antivenereal campaigns in the army; (4) the lessons of the war in the treatment of fractures; (5) purification of water on campaign. All reports and communications on the above subjects should be addressed to the Secretary-General of the Congress, Military Hospital, Liége, Belgium, before May 1st.

During the annual meeting of the British Medical Association at Newcastle, the Popular Lecture will be delivered by Professor Arthur Keith, M.D., F.R.S., on Friday, July 22nd, at 7.30 p.m. The subject he has chosen for his lecture is "Evolutionary wounds, their healing, and the part they play in the evolution of the human body." The lecture will be illustrated by lantern slides.

At the next meeting of the British Association, to be held in Edinburgh under the presidency of Sir Edward Thorpe from September 7th to 14th, 1921, Sir Walter Fletcher will be President of the Section of Physiology, Professor C. Lloyd Morgan President of the Section of Psychology, and Sir James Frazer President of the Section of Anthropology. A joint sectional meeting will be held to discuss problems of biochemistry.

Medical Notes in Parliament.

Venereal Disease.

DISCUSSION IN THE LORDS.

Lord Willoughby de Broke moved in the House of Lords, on March 16th, that the report of the committee on venereal diseases, appointed by the National Birth Rate Commission,* should be printed and issued as a Parliamentary paper. He recalled that the committee was presided over by the Bishop of Birmingham; that its membership included the heads of most of the religious denominations, and also women doctors and physicians and surgeons of the highest standing; further, that it was appointed with the approval of the Minister of Health.

Having, on behalf of the Society for the Prevention of Venereal Disease, expressed entire concurrence with the view that there should be a national effort to assert the moral obligation of chastity, Lord Willoughby de Broke dealt with a

* BRITISH MEDICAL JOURNAL, February 26th, 1921, p. 314.

passage about self-disinfection, in which the Committee held that no obstacle should be placed in the way of people obtaining the right disinfectants from chemists, and that, if necessary, the law should be altered to enable them to do so. In his opinion it was not really necessary to alter the Act of 1917, except perhaps in the way of making it clearer. In one section of the Act chemists were forbidden to expose or advertise or to recommend any drugs, medicaments, etc., or to hold out any of these things as cures or as preventing venereal disease. At the end of that section there was a paragraph to the effect that nothing in it should apply to what was sanctioned by the public health authority. To carry out the idea of self-disinfection which was visualized by the Committee it would be necessary only that the Ministry of Health should put that section into operation, and should, through the public health authorities, enable chemists to sell to people who asked for such things as were duly authorized. He and others who favoured the policy of self-disinfection did not shut their eyes to other means which might be adopted for combating the evil; but this policy had the advantage that it could be carried out immediately by the efforts of the Ministry of Health. Legislation to make communication of the disease a crime or for compulsory notification would, he reminded the House, in any case be difficult to carry. The official policy here had been to exhort people not to commit fornication, and to tell them if they did they should consult a doctor either before or immediately after symptoms arose. That policy had failed in its object.

The Bishop of London pleaded for a consideration by the Government of the report in its entirety. With regard to the policy of disinfection, he said it was impossible to imagine a greater contrast than was to be found between the evidence of Sir Archdall Reid and that of Colonel Harrison. What he gathered from his study of the report was that even in the army a system of disinfection was, except under skilled instruction, practically valueless, and that Colonel Harrison, who had hoped for much from the practice, had been grievously disappointed. If that were the case with the army, it would be almost impossible to apply the proposal in the case of civilians. It appeared also, according to his reading of the report, that the fancied security might give rise to greater licence to sin, with the result that the disease might possibly spread. From the moral point of view such a system, he considered, would debauch the conscience of the community. He did not say that any individual should not have the right to purchase disinfectant or cure for any disease from any chemist. He failed to understand, however, how a personal obligation could be enforced without penalties in case of refusal. He agreed broadly, however, that we had reached a stage when strong measures were needed to meet the situation; and it was for that reason he had introduced his bill.

Lord Sydenham, speaking for the National Council for Combating Venereal Diseases, reaffirmed his view that there was no reason to expect any material result if disinfection were tried among the civilian population. Lord Willoughby de Broke apparently wanted the Government to start a propaganda to enforce disinfection upon the population, and his society was making extensive efforts in this direction. Any chemist could, in fact, sell disinfectants now, though he might not advertise them as a specific against the disease. Lord Sydenham agreed that there was no reason why the nature and effects of disinfection, if properly carried out, should be kept secret. But the Government would be ill advised if it issued a statement which might be misunderstood with consequent increase of infection.

Lord Gorell explained why the National Council for Combating Venereal Diseases had been unable to take up an invitation for a joint conference upon the report with the other society and any other bodies desiring to join. The Council could do nothing in any important matter of policy before there had been a general meeting and the conclusions of that meeting had been confirmed by a second. The first meeting was fixed to take place on March 22nd. Points of policy had been, however, unanimously adopted by a representative executive meeting, and had received the full approval of the Ministry of Health. The report of the Bishop of Birmingham's committee, said Lord Gorell, was the work of a private body—a subcommittee of the National Birth Rate Commission—and could not be regarded as official. It was valuable, but not a document upon which lines of policy could be founded. He hoped that the points which his executive had agreed upon might be adopted by his society and prove acceptable to Lord Willoughby de Broke and his society, but it was impossible to prejudge that matter. On the question of immediate self-disinfection he thought that there could be no doubt that, with proper application, in the enormous majority of cases it would be a preventive; but on this subject he wished to quote a letter he had received from a member of the Bishop of Birmingham's committee who had been for twenty-five years a surgeon in the London Lock Hospitals and now controlled the venereal department of Charing Cross Hospital. This letter, he thought, showed the grave doubt as to the possibility of any authoritative pronouncement being made at the present time.

Viscount Knutsford, after giving figures with regard to new cases in the London Hospital, urged that it was time for vigorous action undeterred by mere speculative theories as to moral results. If he were Minister of Health he would institute a most energetic propaganda, preaching continence and chastity and pointing out the horrors of the disease in the most awful colours. He would insist on the necessity of self-disinfection; he would emphasize that even disinfection was by no means certain in its action; he would open more clinics. But the great difficulty with regard to the last was that 40 per cent. of the people who came did not continue the treatment till cured; and that should be made an offence.

The Earl of Malmesbury agreed with Lord Gorell that to publish the evidence of a more or less private committee as a parliamentary paper would be entirely contrary to precedent. But, speaking as a member of the joint committee which investigated the several Criminal Law Amendment Bills, hearing much evidence, he entirely agreed with Lord Knutsford as to the call for action by the Ministry of Health. In Committee he was much more impressed by the evidence of Sir Archdall Reid than by that of Colonel Harrison.

Lord Askwith and the Earl of Clanwilliam supported the views of Lord Willoughby de Broke.

Viscount Peel, Under-Secretary for War, thought sufficient attention had not been paid in the discussion to the report of the Inter-Parliamentary Committee presided over by Lord Astor. That Committee reported unanimously against the advocacy of self-disinfection for the civilian population, and they came to that decision after considering the war experience of the various armies. In regard to promoting a policy for self-disinfection it was desirable, he thought, that they should arrive at some definiteness as to what medical opinion was; but it was very much divided, and action should only be based on some decided preponderance on one side or the other. Another danger very strongly pointed out by doctors was that disinfectants might be used in many cases as a substitute for the treatment of the disease. This would constitute a very grave and serious danger. Besides, there were the moral and social objections to be considered. He could offer no definite information on behalf of the Ministry of Health, but the question was at present receiving, or would shortly receive, the attention of the Cabinet. The report of the Bishop of Birmingham's committee not being official, he could not, on grounds of economy, agree to the request that the Government should publish it.

Lord Willoughby de Broke regarded the reply of Lord Peel as profoundly disappointing. He thought the Ministry of Health might do much to encourage self-disinfection without invoking penalty. As to medical opinion, he said without fear of contradiction that the vast mass of instructed medical opinion in the country was on his side in the matter, and that a preponderance could be claimed in favour of having a cautious, wise, and scientific system of self-disinfection laid down by the Government of the day, vouched for by the proper authority—namely, the Ministry of Health acting through the local health authorities.

The Archbishop of Canterbury hoped it would not be thought that they lacked belief that the subject would be handled in the best possible manner by the Ministry of Health if they did not support the proposal for publishing the report as a Parliamentary paper.

On a division, 9 voted for publication and 29 against.

Criminal Law Amendment Bill.

Upon report on the Criminal Law Amendment Bill in the House of Lords, on March 17th, Lord Dawson of Penn explained why he did not move an amendment which he had put down to qualify Clause 1. This clause reads:

"It shall be no defence to a charge or indictment for an indecent assault on a child or young person under the age of 16 to prove that he or she consented to the act of indecency."

Lord Dawson intended to move that the section should not apply where the child had attained the age of 13 unless the person charged had at the time of the offence attained the age of 18. His object in presenting this amendment was to secure different treatment for youths from that meted out to older offenders, his belief being that in dealing with the younger offenders the law was not dealing with a perverted instinct but rather with the overflow of a natural instinct at a time when restraint was imperfectly developed. He had, however, since framing the amendment had a conversation with representatives of the Home Office who had convinced him that in application the amendment would not have the object he had in view and that it would be more successfully achieved by administrative means. Great discretion was already exercised by chief constables and other authorities, and it was very rare for these young persons to be brought before a court and indicted as criminals. It was held also that the amendment might weaken administrative authority in those few cases amongst young persons which it was desirable should be brought before the justices; hence he did not pursue the matter.

Some drafting amendments have been made, but otherwise the bill passed the report stage as in committee.

Hospital Finance Committee's Report.

In reply to Sir Godfrey Collins, on March 17th, Dr. Addison said that the Committee on Hospital Finances, the substance of whose interim report is given on page 468, hoped to complete the hearing of evidence by the beginning of May, and to present their final report before the end of that month.

Dangerous Drugs Act Regulations.

The Departmental Committee set up by the Home Office to consider what regulations shall be made under the Dangerous Drugs Act has held several meetings under

the chairmanship of Mr. Chester Jones. A *précis* of the evidence given this week on behalf of the British Medical Association by Dr. Bone and Dr. Cox is printed in the SUPPLEMENT at page 82.

The Parliamentary Medical Committee.

The Parliamentary Medical Committee, which consists of medical members of the House of Commons and university representatives, met on March 21st. Lieut.-Colonel Nathan Raw presided. Captain Elliot is honorary secretary of the group. Sir Philip Magnus raised the question of the security of tenure of medical officers of health. He presented a draft bill, and it was agreed that this should be brought up to date and resubmitted at a subsequent meeting. It was further agreed that reports of the proceedings of the Committee should be communicated to the medical newspapers.

A deputation from the Medico-Political Union consisting of Dr. Welply, Dr. Gordon Ward, Dr. Greig and Dr. Peter Macdonald, submitted their views on two matters: (1) The new medical record cards, and (2) the new regulations on the transfer of practices and their bearings on the selling value of practices.

The Scottish Board of Health.—Major Glyn asked the Minister of Health, on March 15th, if all instructions drafted by the Ministry of Health regarding forms to be filled in, were invariably submitted to the Scottish Board of Health, or whether the Scottish Board of Health were brought into consultation when such forms were under consideration; and whether, should any difference of opinion arise, the Secretary for Scotland would decide if the desire of the Ministry of Health should apply to Scotland. Dr. Addison replied that the Ministry of Health were not concerned with forms applicable to Scotland except in the case of forms, prepared by the Department, of building material supplied, in regard to which the Scottish Board of Health were consulted. The answer to the latter part of the question was in the affirmative.

Medical Staff of the Ministry of Health.—In answer to Sir T. Bennett, on March 16th, Dr. Addison said that the number of whole-time and pensionable medical men employed in the Ministry of Health and the Welsh Board of Health was 71.

State Contributions to Health Services.—Mr. T. Thomson asked, on March 16th, whether, in view of the results obtained from the activities of local authorities in the exercise of their powers for the amelioration of the health conditions of their areas, the Minister of Health would see that no curtailment took place in the grants made from the Exchequer in support of school clinics, maternity welfare centres, the care of tuberculous cases and similar work, when preparing his estimates for the coming financial year. Dr. Addison replied that the Minister for Education was responsible for the provision of school clinics. As regards the other services mentioned, the amounts inserted in his own estimates for the next financial year were such as were required to provide the State contribution towards existing services and commitments and also for such extension as could be shown to be necessary for immediate and urgent health requirements. Lieut.-Colonel Raw asked what grants were made by the Ministry of Health towards the cost of treatment of tuberculosis, and what proportion of the total expenditure was represented by those grants. Dr. Addison said that grants amounting approximately to £97,000 would be made during the current financial year towards the expenditure of local authorities on the treatment of tuberculosis. The grants represented less than a farthing in the pound on the total sums voted by Parliament for the supply services of the country. In addition to these maintenance grants, grants in aid of capital expenditure amounting to £36,000 would also be made.

Medical Record Cards.—Asked by Sir W. Davison, on March 16th, the precise composition of the committee set up to deal with medical record cards, Dr. Addison said it was under the chairmanship of Sir Humphry Rolleston, and was composed in all of seventeen persons, of whom fourteen were medical men. Of the fourteen medical men on the committee four were in insurance practice at the time, and the fifth had been in such practice until shortly before the committee's appointment. Mr. A. T. Davies asked the Minister of Health, on March 17th, whether large numbers of patients' record cards had been inaccurately filled up by medical men or others; whether the numbers had increased during the past three months; whether he was satisfied with the present method of inspection; and to what he attributed the growth of inaccuracy in these returns. Dr. Addison replied that in the filling up of 13,000,000 cards a certain number of inaccuracies was inevitable, but his information was that the tendency was all in the direction of improvement, and the last part of the question did not therefore arise. The answer to the third part of the question was in the affirmative.

The Bloomsbury Site for London University.—In reply to Sir J. D. Rees, Mr. Chamberlain, on March 16th, said that no decision had been taken on the question of the period during which the Bloomsbury site was to be kept for the new building for London University. The agreement with the vendor contained the clause under which, if before April 1st, 1926, the Government gave notice that they found it impossible to use the property for the purposes of the University, the vendor had an option to repurchase it for the price given, and if he did not exercise the option the restriction of the use of the site for purposes of the University was removed. During the period of waiting the property would be administered in its existing form, and in the improbable event of the abandonment of the scheme, it would be for the Government of the day to determine whether to dispose of the site, or to divert it to other purposes.

Venereal Disease on the Rhine.—Captain Elliot asked, on March 16th, whether the Secretary for War was satisfied with the venereal disease admission rate of the army of the Rhine, which showed no reduction from the admission rate as stated by Mr. Churchill in May, 1920; whether this meant that in six years the admissions for venereal disease would have equalled the total strength of the force; and whether every possible effort was being made to reduce the rate, including the spread of information as to self-disinfection. Sir L. Worthington Evans said the incidence of the disease on the Rhine was not satisfactory, and had, indeed, been anxiously considered ever since the area was first occupied. The figures given by Mr. Churchill last May were approximate only. The corrected figures now available showed that during the first quarter of 1920 the ratio admitted to hospital for venereal disease was 45.81 per 1,000 of the strength. The ratio for the last quarter of 1920 was 40.22, and for the month of January last it was equal to a quarterly ratio of 37.80. These figures indicated a gradual improvement. The admission rate included every case admitted to hospital—relapses and readmissions for further treatment, as well as primary infections. Amongst the efforts being made to reduce the amount of disease was the spread of information about self-disinfection as followed in the United Kingdom, where the incidence was now, and was for the year 1920, at a lower level than at any other time in the history of the British Army.

Civil Policy as to Venereal Disease.—Viscountess Astor asked, on March 16th, whether the Minister of Health proposed to depart from the policy of dealing with venereal disease which was adopted by him on the unanimous recommendation of the Interdepartmental Committee which reported last spring after taking full evidence. Dr. Addison replied that the question whether any modification in policy was required was now under consideration, and he was not at present in a position to make a definite statement on the subject. Dr. Farquharson asked if Dr. Addison was aware that the great weight of evidence given before the Interdepartmental Committee and before the Birth Rate Commission was entirely against the idea that packets for self-disinfection were efficacious means for stopping or preventing venereal disease. Dr. Addison said he believed the statement to be correct, and also that it was supported by the experience of the various armies; but the whole matter was under consideration.

The Disability Pensions New Warrant.—On inquiry by Sir T. Bramsdon, Mr. Macpherson stated, on March 17th, that in the case of all soldiers whose claim to pensions or grants for services during the war had been dealt with under previous warrants, return to the previous warrant might, if more beneficial to them, be applied with retrospective effect as from September 3rd, 1919. Similar provision was made in the Order in Council dated June 11th, 1920, for seamen and marines. There had been delay in the issue of the Order, but this did not obstruct the process of award.

Neurasthenic Patients: Treatment.—In reply to Sir Walter de Frece, on March 17th, Mr. Macpherson said that the facilities for the treatment of ex-service neurasthenic patients had already been greatly extended, and the arrangements made by the Ministry were still in process of development. It would need a prolonged investigation to ascertain the total number of men treated since the formation of the Ministry. The number of officers and men at present under treatment was 9,921.

Blind Welfare: Advisory Committee.—Dr. Addison said, in reply to Mr. Myers on March 17th, that the term of service of the members of the advisory committee on the blind expired in December last; that he was proposing to set up a new advisory committee, and hoped to announce its composition very shortly.

Indian Medical Service: Travelling Facilities.—Lieut.-Colonel Raw asked, on March 16th, when the long promised concessions to officers in the I.M.S. with regard to passages to and from India on duty, would be brought into operation. Mr. Montagu replied that he was not clear as to the reference. Officers proceeding to and from India on duty were granted free passages; possibly Lieut.-Colonel Raw was thinking of officers proceeding on sick leave. In those cases grant of free passages was sanctioned in June last.

Medical Service on River Gunboats in China.—Commander Bellairs asked, on March 17th, whether there was a medical staff of a surgeon and a sick-berth attendant to a remaining crew of twelve men in each of our river gunboats in China; whether the First Lord of the Admiralty was aware that the American and French gunboats did not carry doctors, and whether the Board would consider the economy that could be made by relying on the missionary doctors along the river. Sir James Craig replied that the Upper Yangtse had two gunboats with one medical officer and one sick-berth rating between them. The Lower Yangtse had eight gunboats with five medical officers and six sick-berth ratings. The West River had four gunboats with two medical officers and two sick-berth ratings. There was no information as to whether the American or

French gunboats carried medical officers. It was not considered desirable nor practicable to rely on the services of the missionary doctors. The complement of the vessels varied from twenty-five to fifty-three. Owing to the climate and the difficulty of obtaining good vegetables, sickness had to be provided against, as well as the possibility of casualties from local disturbances.

Naval Hospital at Yokohama.—Sir James Craig, in answer to Commander Bellairs, on March 17th, gave the following information as to the British Royal Naval Hospital at Yokohama: Accommodation, 87 patients; Staff, 1 surgeon commander, 4 sick-berth staff and 13 native employees; maximum number of patients under treatment last year 8, minimum number, nil.

Nurses' National Fund.—Mr. John Davison asked, on March 14th, whether the Government had any control over the administration of the Nation's fund for nurses, and whether it was a fact that although one of the main objects of the fund was to benefit nurses who were in precarious circumstances owing to after-war conditions, or were suffering ill health as a result of war strain, out of a total of nearly £150,000 only £2,144 had been applied to this purpose, while nearly £40,000 had been given to the College of Nursing. The Prime Minister replied that the Government had no control over the fund; and he had no knowledge how it was administered. He advised Mr. Davison to direct his inquiries to the Charity Commissioners.

Antimony Treatment for Ex-Service Men.—Captain Thorpe asked the Minister of Pensions, on Monday, whether in view of the successful treatment by antimony of ex-service men who contracted bilharziasis during the late war, he could hold out any hope of similar treatment being at public expense to pensioners who contracted the disease in the South African campaign and were still suffering. Mr. Macpherson replied that the matter was under consideration.

Food in War and Peace.—Mr. Sugden asked the Minister of Health, on March 21st, what steps he was taking to alter the food products instituted in war days as substitutes for a more nourishing type, to protect the physique of the people, especially that of industrial workers and their children, and what action he proposed to take to ensure that local authorities had these matters under close and practical scrutiny. Dr. Addison said he was not sure what particular classes of products Mr. Sugden had in mind. Substitutes such as margarine had generally been adopted by consumers for economic reasons, and so far as he was aware all staple articles of food were now freely available. Local authorities generally had resumed the active enforcement of the Food and Drugs Act, and the information obtained from their reports did not indicate that there was any increase in adulteration.

Artificial Limbs.—Mr. Macpherson informed Mr. Aubrey Herbert, on March 21st, that light metal limbs made by Desoutter were supplied by the Ministry of Pensions when specially recommended by a board of surgeons for reasons which made the supply of this particular limb essential. Where it was considered by the surgeons that another type of limb would be equally satisfactory, the issue of a Desoutter limb was refused on grounds of economy.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on March 8th seventeen cases were considered, and £175 voted to fourteen applicants. The following is a summary of some of the cases relieved:

Widow, aged 60, of M.R.C.S. who died in February, 1921. Applicant's husband had been unable to practise for some time owing to failing eyesight and old age, and the small amount of £60 left at his death from the practice was much reduced by funeral expenses and debts. The widow's sole income is £37 10s., and at present her rent and rates amount to £32 per annum.

Daughter, aged 49, of M.R.C.S. who died in 1873. Applicant was operated on in June, 1920, and since has been living on her small savings and cannot possibly return to nursing, her profession, for some considerable time. She asks for temporary assistance whilst incapacitated.

Widow, aged 44, of L.R.C.P. and S.I. who died in 1918. Applicant was left with two children totally unprovided for, and asks assistance towards the education of the children. Her father-in-law makes her an allowance, but this help may cease at any time; she augments this by letting apartments. Help has been given by the Irish Medical Benevolent Fund and the Professional Classes War Relief Council. Her rent is £48 per annum.

Daughter, aged 65, of M.D. Lond. who died in 1885. Applicant has supported herself by needlework, but owing to advancing years and failing eyesight, cannot do the amount of work necessary to pay her way. The amount she now earns is about 18s. a week, and her rent is 4s. a week. The Fund rendered assistance to the applicant's sister some time ago, but she is now in the infirmary.

Daughter, aged 50, of M.R.C.S. who died in 1870. Three sisters live together in one room, one an invalid. Applicant made about £50 this year at nursing, but owing to ill health has applied to the Fund for assistance. The rent of the room is 16s. a week.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

THE PREVENTION OF VENEREAL DISEASE.

POLICY OF THE NATIONAL COUNCIL.

IN view of recent events and controversies, the executive of the National Council for Combating Venereal Diseases has drawn up a statement of what it considers should be the general policy of the Council, and this was submitted to the full quarterly meeting of the Council on March 22nd.

It is declared, in the first place, that the public must be officially informed of the prevalence, causes, and consequences of venereal diseases. As by far the most important cause is promiscuous sexual intercourse, the question cannot be dealt with apart from social and moral factors, with regard to which all medical practitioners, parents, and teachers must feel their separate responsibility. Parents must instruct their children, not only in the facts of sex, but in the moral obligations thereby imposed. The action of public health authorities in dwelling in their publications on the medical prevention of these diseases, to the exclusion of moral considerations, is deprecated. The means used to prevent the spread of the diseases must not be such as to weaken the deterrents or have any appearance of condonation. At the same time, the executive recognizes that there are individuals who do not respond to the moral or social appeal, and who may not only contract the diseases themselves but may be a means of infection to others, often innocent persons. The development of disease in these irresponsible and immoral individuals must be prevented as far as this is possible without condonation. The public recommendation, by advertisement or otherwise, of protective disinfectants must result in giving increased notoriety to quack remedies, and is deprecated; while detailed official instructions as to the use of these disinfectants, issued with the sale, will have the appearance, not only of official condonation but of official guarantee to the purchaser against contracting the disease. Furthermore, such instructions, unless scrupulously followed after definite and personal tuition, may aggravate rather than diminish the incidence. The public should be warned against attempting self-treatment. On the constructive side, the executive urges that strict personal cleanliness, with information as to the part played by dirt and disease organisms in causing infection of the genital passages, should be inculcated as part of the instruction in sex hygiene. If an individual has incurred, or believes that he (or she) has incurred risk of infection, he must be brought to understand that it is his bounden duty to cleanse himself thoroughly and immediately; delay or inadequacy may lead to development of the disease. If any signs or symptoms, however slight, make their appearance it is his duty to attend promptly at a venereal diseases clinic. It should be officially stated that it is only by fulfilling these duties that the individual can make such amends as are possible for what is a social as well as a moral offence. The existing cleansing and disinfecting centres should be continued experimentally, subject to careful supervision, and any decision as to their extension should depend on the experience obtained. The Ministry of Health, finally, is asked to accept publicly this considered policy as one which is essential to the successful waging of warfare against these diseases in this country.

The statement of policy, of which the above is a summary, was adopted by the National Council.

DR. GEOFFREY LUCAS was entertained to dinner at the Palace Hotel, Aberdeen, on March 17th, by a large and representative gathering of the medical profession and residents of Aberdeen and district and Banchory, the occasion being his approaching departure from the district, consequent upon his resignation of the post of medical superintendent of the Nordrach-on-Dee Sanatorium, Banchory, with which institution Dr. Lucas has been associated for the past twelve years. Appreciative speeches were made by Professor Ashley W. Mackintosh of Aberdeen University, Lachlan Mackinnon, Esq., and Provost McHardy of Banchory. The guest of the evening fittingly responded. On March 19th Dr. Lucas was the recipient of a handsome canteen of silver as a token of esteem and gratitude from his patients at Nordrach-on-Dee.

Scotland.

SCOTTISH BOARD OF HEALTH.

DR. NORMAN WALKER, Edinburgh, has been appointed chairman of the Scottish Board of Health Consultative Council on Medical and Allied Services, in succession to Principal Sir Donald MacAlister, K.C.B., and Dr. John Yule Mackay, Principal of University College, Dundee, has been appointed vice-chairman, in succession to Dr. Walker. While relinquishing the chairmanship of the council, Sir Donald MacAlister will continue to give his services as a member of the council.

THE CAMERON PRIZE.

At a meeting of the University Court of the University of Edinburgh on March 14th, with Principal Sir Alfred Ewing in the chair, it was reported that the Senatus had awarded the Cameron Prize for 1921 to M. Jules Jean Baptiste Vincent Bordet, Director of the Pasteur Institute, Brussels.

THE EDINBURGH TUBERCULOSIS TRUST.

The report presented to the annual general meeting of the Royal Victoria Tuberculosis Trust in Edinburgh stated that the work of establishing a sanatorium colony at Southfield, in the parish of Liberton, was making good progress. The site is within a short distance of Edinburgh and not far from the new chemical laboratories of the University. Sir Robert Philip expressed the hope that the new colony, while affording opportunities for controlling observation, investigation, and research, would result in important contributions to the knowledge of tuberculosis and the most effective means of treating it. Recently persons concerned in the treatment of tuberculosis had been bombarded by inquiries about the Spahlinger treatment, and he had himself received one night a long cablegram from a colonial Government asking what steps should be taken to obtain the benefits of the treatment for patients in the colony. Such an incident and the excitement generally meant hopeless ignorance as to tuberculosis; it was an infectious disease, which took a long time to come, a long time to go, and for which there was no magical cure. The Edinburgh Tuberculosis Trust sought to educate the public, and by establishing a chair of tuberculosis in the University of Edinburgh was endeavouring to ensure that every student of medicine received a thorough training in the subject. The search for a cure would continue, but the public should look with caution on novelties for which more was often claimed than could be fulfilled.

Ireland.

WOUNDED IN HOSPITAL.

IN connexion with the representations recently forwarded to the President and Council of the Royal College of Surgeons in Ireland regarding fellows and licentiates of the Royal College and other members of the profession in Ireland affected by the military Order requiring them to furnish daily particulars of wounded persons under their care in hospital, Sir William Wheeler, Vice-President, in the absence, owing to illness, of the President, Mr. E. H. Taylor, has forwarded to the Irish Medical Secretary a copy of the following resolution adopted by the Council of the Royal College of Surgeons in Ireland:

> The Council are of opinion that it is contrary to the public interest that medical men should break their professional tradition and, without the consent of their patients, disclose information which they have obtained in the discharge of their professional duties. If any instance is reported to the Council in which one of the fellows or licentiates of the College is pressed to break confidence, such specific case will be considered by the Council, and representations made to the authorities if such be thought necessary.

The pronouncement contained in this resolution will be much appreciated by the profession generally, as there were many professional objections against compliance with the military Order. If the Order were carried out by the profession in Ireland, it would mean that wounded members of the Irish republican army would be disposed rather to die from their wounds than seek medical aid, when doing so meant for a certainty their trial at a later date by the military authority. This aspect of the working of the military Order caused medical men in Ireland much anxiety, as in practice it would mean the denial of medical aid to the wounded.

POOR LAW MEDICAL OFFICERS' SALARIES.

The Council of the Royal College of Surgeons in Ireland has also had under consideration the non-payment of the salaries of Poor Law medical officers in the circumstances stated in this column on February 26th, 1921 (p. 319). The Council appointed Sir William Wheeler, Vice-President of the College, to interview the Local Government Board (Ireland), with the result that he has received from the Vice-President (Sir Henry Robinson) of that body the following letter:

> Dear Sir William Wheeler,
>
> In accordance with my promise I write to let you know that the draft Order in Council, which I read to you when you called here yesterday, has been approved by the Privy Council and the order made.
>
> The Order will empower the Local Government Board to authorize boards of guardians and district councils to pay interest on overdrafts which they may require to enable them to meet salaries of medical officers and other urgent payments until they obtain the requisite funds for the purpose from the county councils.
>
> Yours sincerely,
> (Sgd.) H. A. ROBINSON.

The Order referred to will not meet the case of the Poor Law medical officers including those retired on pension. The main obstacle to the payment of the salaries of Poor Law medical officers and the pensions of retired Poor Law medical officers is the Malicious Injuries Amendment Act, 1919, and the Restoration of Order in Ireland Act, 1920. These Acts provide that all grants for health and other local administration, as well as all moneys raised through the local rates, are to be set aside to meet awards made for malicious injuries, including those committed by the Crown forces. In connexion with these malicious injuries, Mr. Justice Pim, in his recent address to the Queen's County grand jury, said:

> "As to the destruction of property by so-called reprisals, it was a matter for suggestion that it should not be put on the county, but where the destruction was caused by Irishmen it was right Irishmen should bear the burden. It would all end in no county being able to bear what the law would put on."

The last sentence quoted from Mr. Justice Pim's address describes what has happened in the majority of Irish counties; they are not able to meet the burden put on them by recent legislation. The entire machinery of local government administration in Ireland is at present employed, in the first instance, on the collection of the awards for malicious injuries. The result is that the health services are not administered; they are practically suspended, except so far as the local doctors in their charity afford gratuitous attendance to the necessitous poor. Numerous complaints are made that poor persons are dying from want of sufficient medical attendance and medicine. The local authorities, however, disclaim all responsibility; they point out that they have made provision in their rate estimates for this year for the carrying on of health administration and other essential services, but that all the efforts of the Government are directed to compelling the local authorities to continue to lodge their funds with banks as treasurers for the purpose of meeting the awards for malicious injuries by whomsoever committed. The complaint of the Poor Law medical officers and other medical officials, whose salaries are paid out of the rates and public grants, is that recent legislation, in connexion with the disturbed conditions in Ireland, should provide for the seizure of their well-earned salaries and their diversion to meet the awards for malicious injuries. Moreover, the amended statutes, which in their application have inflicted such hardships on the Poor Law medical officers and the necessitous poor for whose treatment they were responsible, made special provision that certain public funds set aside in aid of land purchase should be exempted and expended as heretofore. When this legislation was being enacted there were stronger reasons why the public grants and other moneys for Irish health services should be similarly safeguarded, if only in respect for the Red Cross. It is only right to state that the permanent officials of the Irish Local Government Board are not responsible for the present condition of the Irish health services. That Board

had no choice but to administer the local government statutes as they left Westminster. The Chief Secretary for Ireland is the President of the Irish Local Government Board as well as Minister of Health for Ireland. In his dual capacity the Irish medical profession have appealed to him, and based their case more on the grounds of suffering humanity than on their own personal interests. Notwithstanding this appeal the Chief Secretary's attitude is unaltered. The position is this, that fully 30 per cent. of the necessitous Irish people are left by the Government absolutely unprovided for as regards medical treatment and medicine. Such a state of affairs could not have arisen had a Ministry of Health been established in Ireland on the same lines as in England and Scotland.

Correspondence.

PAST APPEARANCES OF ENCEPHALITIS LETHARGICA.

SIR,—So much publicity has naturally been achieved by the recent memorandum of the Ministry of Health on "Encephalitis Lethargica" (Memo. 45 Med.), that it seems desirable that attention should be drawn to the extraordinary inaccuracy of the paragraph thereof which bears the above heading.

1. Willis died in 1675. The allusion, therefore, to a "strange fever" arising in 1685, and described by him, seems "obscure." In 1918 I identified Willis's "epidemical feavour" of *1661* as a myoclonic form of "encephalitis lethargica"; Dr. Hamer has identified the "strange fever" of *1658* (following the influenza of that year) as cerebro-spinal meningitis.

2. The "epidemic of somnolence with associated nervous symptoms" recorded by Camerarius in 1712, appears to relate to the account by R. J. Kammermeister of an epidemic febrile catarrh in 1712 that has been hitherto regarded as influenza by every epidemiographer, and which *was* influenza without doubt. As Kammermeister himself said, during this epidemic, he saw few people who were sleepy *unless they had opium*. It is to von Economo that must be attached the responsibility for the suggestion that in 1712 one Camerarius described what we now call encephalitis lethargica, as a clinical entity distinct from influenza. In 1729, however, *Elias* Kammermeister described admirably, as arising during an epidemic of what we now call influenza, an outbreak of myoclonic disease indistinguishable from what is now called encephalitis myoclonica.

3. It is difficult to say what epidemic is indicated by the reference to "Lepecq de la Clôture (1768)," but a careful perusal of the works of the author indicated has failed to satisfy me that, during the "grippe" observed by him in 1768, he noted cases that were "encephalitis lethargica" rather than cerebro-spinal meningitis.

4. By "Ozanann" the Ministry apparently intends reference to Ozanam, the celebrated French epidemiologist, who described much of our modern "influenza" as *fièvre catarrhale*, and so forth. The German prevalences of 1745, the Lyonnais prevalence of 1800, and the Milanese affair of 1802, are all accepted nowadays as parts of the "influenzas" of those years, which he recorded at second-hand.

These facts render even more strange than otherwise would be the case, the statement of the Ministry (loc. cit., p. 8) that no direct relation between encephalitis lethargica and influenza has been established, and the earlier statement of the Ministry's chief medical officer (Annual Report, 1919–20, p. 48) that the pandemic of influenza of 1918–19 was accompanied, *in point of time merely*, by encephalitis lethargica in various parts of the world. Since a relation in space is not denied, it is difficult to see what other relation than one in time could be expected. What relations other than those of space and time does the Ministry hope to establish by way of "epidemiological connexion"?

As a matter of fact, complete demonstration has been given by me that, during 450 years at least, outbreaks of "epidemic encephalo-myelitis" in many clinical and epidemiological forms have invariably appeared in definite relation to epidemics of influenza.

The demonstration of this fact constitutes practically the only recent advance in our comprehension of influenza; and it is of cardinal importance, for it affords us a means of foreknowledge of the outbreak of influenza on the grand scale. This was first shown in the Chadwick Lectures for 1918, and later in a paper which was published in the *Proceedings* of the Royal Society of Medicine (Section of History of Medicine) during 1919, and has since been reprinted both at home and abroad and largely copied.

There is no excuse for the appearance in an official memorandum of the inaccurate and loose "historical" references to which I have alluded, for the real historical facts were given in this paper and could have been easily verified.—I am, etc.,

London, W., March 16th. F. G. CROOKSHANK.

ASTHMA AND ANAPHYLAXIS.

SIR,—Before accepting Mr. Frank Coke's teaching on anaphylaxis as the explanation of asthma (BRITISH MEDICAL JOURNAL, March 12th, 1921, p. 372) we must ask if it accounts for all the facts and whether it does not suggest a less complex line of treatment. In the typical picture of anaphylaxis experimentally induced the animal "becomes restless, scratches its muzzle as if irritated; respiration is quickened, then difficult; vomiting takes place, especially in dogs; there is diarrhoea with discharge of blood; micturition occurs; tetanic spasms and somersaults give place to paralysis and collapse; cessation of breathing brings death. There is marked eosinophilia and other blood changes." Of this picture the vomiting and diarrhoea occasionally occur in asthma; the difficult respiration and eosinophilia are regular characteristics. Therefore for asthma anaphylaxis is of interest pathologically, and the results recorded by Mr. Coke show that there is value therapeutically. In short, there is clear evidence of an upset metabolism in asthma; this I have repeatedly tried to point out.

But cannot we go further back, and get to something simpler than anaphylaxis, and especially to something simpler in treatment? The extreme sensitiveness displayed by these patients to minute doses of hundreds of substances harmless to ordinary individuals indicates an extraordinarily unstable metabolism. How is this instability brought about? Is it not likely that it is brought about in a large number of the 50 per cent. who exhibit anaphylaxis in the same way as in the 50 per cent. asthmatics in whom Mr. Coke has been unable to demonstrate anaphylaxis? There is much clinical evidence, supported by therapeutic success, to show that excess of energy food in proportion to energy expended is at the bottom of the condition—be it symptom or disease—called asthma. The mucous membranes become water-laden, plethoric, so that there arise the catarrhal conditions so frequent in children, catarrh of the bronchial tree manifested as recurrent bronchitis; similarly arises catarrh of the skin—eczema. The carbohydrate excess seems to interfere with protein metabolism, and so toxaemia results; to this the intestinal condition contributes. By regulating diet and exercise on these lines we can get the patient cured—to stay cured—in about 70 per cent. of uncomplicated cases.

Again, asthmatic attacks are most frequent between 2 and 4 a.m., and in working men are remarkably common on Sundays and Mondays — week-end asthma. This periodicity there is no gainsaying; and if there is one striking feature about anaphylaxis it is not periodicity.

Yet again, take these five cases from a list of over 600. They are chosen merely because they are all the cases that have come to me since October from the demobilized army, and because the lesson to be drawn is so plain that any one may read.

A., aged 23 (seen in October). Asthma twenty years, except when in the army (three years) and prior to that when at an English boarding-school (two years) where the life was similar in respect of exercise and diet to that in the army.. Asthma recurred some months after return to civil life, but has much improved on following proper lines as to diet and exercise.

B., aged 25 (seen August 8th, 1920). Asthma for lifetime, except in the army (four years), and prior to that in English boarding-school (four years). Demobilized eighteen months; first attack March, 1920, then almost weekly, at week-ends. Has remained well since treatment. (A cousin of this man, aged 28, had a very similar history, with the addition of paroxysmal sneezing, the attacks being latterly of markedly week-end type. She became well on turning postwoman during the war.)

C., aged 27 (seen in October, 1920). Asthma twenty-two years, except in the army while in the infantry. On getting a commission and a "soft job" he had recurrence. Reports now "Very well. have had no attacks."

D., aged 24 (seen in October, 1920). Asthma twenty-two years, except in the army (three and a half years) and once just after armistice. Three months well after demobilization, then recurrence, chiefly at week-ends. Asthma now much better, but there are still occasional attacks.

E., aged 32 (seen March 8th, 1921). Asthma six years—that is, two years before entering army. None while in army (three years); fortnightly since (mostly week-end; Mondays and Tuesdays off work).

These cases will all get well and remain well as long as they properly apportion diet and exercise, especially open-air exercise, and take care as to the cooking and eating of their food. If comment is necessary, it is contained in the story of the following case:

A Salvation Army officer, aged 47, was sent to me in July, 1916. Asthma thirty years, except seven out of eleven years in Canada. While there he visited an Indian location. An old squaw said to him, "You breathe heavy." "Yes; I have asthma." "Ah, you English eat too much." "What would you have me do?" She held up two fingers. "Two days no eating." As before his telling me this story I had advised a weekly fasting day, he was so struck by the advice that he followed it. He came to see me in June, 1920, and said, "I've not been out of bed one night for three years; for two years while in France I had no asthma, though I slept in the open in the wet and mud. I can bring on asthma by an indiscretion in diet, and as I'm travelling about the world living mostly in hotels I cannot control my diet, but just leave certain things alone"—mainly a matter of cookery—"but I fast on Fridays and stick to my weekly blue pill."

Similar cases, multiplied to weariness, could be adduced from civil life, all pointing the same lesson. What is wanted is research as to the metabolism in asthma, such research as has been carried out, especially in America, as regards kidney conditions and glycosuria, and probably no disease would prove more illuminating on many problems in metabolism.—I am, etc.,

JAMES ADAM, M.A., M.D.,
Surgeon for Diseases of Ear, Nose and Throat, Royal Infirmary, Glasgow.

March 18th.

THE CURE OF HAEMORRHOIDS WITHOUT OPERATION.

SIR,—In the interesting correspondence on this subject I have as yet seen no mention of the curative properties of electricity. Many patients fear operation or cannot, for reasons of general health, undergo either operation or any procedure involving pain. Every electro-therapeutist sees so many patients who exclaim, "Why did no one tell me of this method of treatment years ago?" that they are only beginning to realize how little it is known by the profession at large.

Patients who have suffered for ten and sixteen years with constant bleeding, with pain which is rarely absent, are, after ten to twenty applications of the local high frequency current, relieved of pain and bleeding. Where pruritus and eczema accompany the haemorrhoids the relief in the majority of the cases is almost magical; a week of daily ten-minute treatments giving more progress than months—in some cases years—of ointments and lotions. At the same time the patient remarks that the treatment has a very tonic effect upon the general health, so that the termination of the period of treatment is regretted. Any remaining piles can be dealt with by electrolysis, which is painful, probably as much so as the method of injection.

I feel that an apology is due for taking up your valuable space by the mention of a matter so well known to all electro-therapeutists, but the fact that several practitioners have told me that they had never heard of this method of treatment must be my excuse.—I am, etc.,

London, W., March 12th. AGNES SAVILL, M.D.

PUERPERAL INFECTION.

SIR,—I have been much interested and rather amused at the many articles on this subject wherein our learned professors give most elaborate advice, etc., as to the manner in which the medical man should clothe and disinfect himself when attending a midwifery case, but they fail to state that the majority of cases of puerperal infection are due to bad nursing and dirty habits on the part of certain so-called monthly nurses (Mother Gamps), and whom the medical attendant scarcely ever appears to trouble about after having performed what he considers to be his own part of the work, and leaving the house when everything appears to be satisfactory, not waiting to see if the patient is properly washed and that all dirty clothing and slops are at once removed from the bedroom.

How is it that some medical men have more cases of puerperal fever in their practices than others, although most careful about disinfecting themselves, etc.? I have ventured to supply the answer. I have seen nurses throw dirty diapers under the bed of the patient, also the chamber filled with discharges, etc., and who did not intend removing them for some hours after unless forced to do so. I have known a nurse, after disinfectants had been previously used, pour water into a lately used chamber pot in order to wash the patient's private parts, and when remonstrated with, reply, "Oh, I have been a nurse for many years, have attended the best families, and you are the only doctor who has ever told me it was wrong."

As a medical man who has attended many cases of midwifery, I would venture to suggest the following simple recommendations, but which, of course, would not be applicable to either trained nurses or those who understand the importance of sanitary conditions, namely:

1. Do not leave the patient for at least half an hour after the placenta has been removed, and see that the nurse uses a proper vessel containing the clean water with disinfectants to wash the perineum, etc.
2. If the nurse is a novice at the work, do it yourself and show her the correct way.
3. See that all soiled clothes, diapers, and slops are immediately removed from the bedroom and do not allow them to be thrown under the bed, only to be removed later on (a very common occurrence). There is very little fear of puerperal fever if these instructions are thoroughly carried out and the medical attendant takes the necessary antiseptic precautions about himself.—I am, etc.,

Bristol, March 16th. W. HOWARD CORY, M.R.C.S.Eng.

THE CONTROL OF BILHARZIA: DESTRUCTION OF MOLLUSCS.

SIR,—It has been suggested that wild birds should be employed to lessen the incidence of bilharzia infection, because they are known to feed on fresh-water snails. The Public Health Department was recently considering the desirability of introducing otters into the stream at Pinetown, Natal, for a similar reason. The destruction of those species of fresh-water snail which harbour schistosomes, more especially *Physopsis africana*, *Limnaea natalensis*, *Planorbis pfeifferi*, *Isidora forskali*, *Isidora tropica*, *Isidora schackoi* and *Modiolae capensis* should certainly be attempted in those places which show evidences of stream pollution; but to eradicate fresh-water snails from any country would seriously disturb the balance of nature in many regions because of the number of organisms that depend upon the snail for food. Our attention should rather be directed to those places where artificial dams have tended to increase the number of fresh-water snails and other evidences of stream pollution. A few domesticated duck will soon rid such artificial collections of water from fresh-water snails. A pool at Sydenham, from which I used to collect hundreds of infested snails in 1919, has been kept free from them for twelve months, as a result of the Indian to whom the pool belongs introducing three domesticated ducks on my advice. Besides *S. bovis*, some of the schistosomes that infest these snails probably infest animals, and the introduction of water animals is only likely to increase the number of infested snails. Domesticated duck soon eat up all the snails without introducing others to take their place; but, in providing snails as food for wild-bird life, nature has safeguarded the extermination of the snails by providing that, when visiting a pool in search of snails for food, the wild birds should carry in the clay attached to their claws minute snails and snails' eggs. Wild birds thus assist in the spread of bilharzia infection.—I am, etc.,

F. G. CAWSTON, M.D.Cantab.

Durban, Natal, Feb. 17th.

BIBLIOGRAPHICAL REFERENCES.

SIR,—In the JOURNAL of March 19th Dr. W. C. Rivers criticizes my book on *Pulmonary Tuberculosis in General Practice* (Cassell and Co., 1916), on the ground that one-third of the bibliography refers to the writings of Scotsmen—an offence in itself—and that there are no references to original German or Austrian papers. In attributing these

blemishes to political and geographical prejudice he is right, but in ascribing these prejudices to me he is wrong. As stated in the preface, the book was written during 1914–15 in a warship. This ship was cruising between Sierra Leone and the mouth of the Amazon, and in that part of the South Atlantic Ocean there are no reference libraries, this being a deplorable fact for which I am in no way responsible. Had there been access to a library I would have quoted in certain instances the original German authorities. On the other hand, the book makes no pretence to be a compilation of the writings of others, and as there are only fifty-five references in a work of over 100,000 words, the proportion of Scotsmen quoted should cause no undue anxiety.—I am, etc.,

London, S.W., March 19th. HALLIDAY SUTHERLAND.

IRRITABLE BLADDER.

SIR,—Many learned and interesting papers have appeared lately on retention of urine arising from prostatic hypertrophy with residual urine. But for every one such case that a practitioner is consulted about, there are at least twenty who ask his advice on irritable bladder where there is no question of residual urine, only a feeling that when the desire comes to micturate the patient must at once do so or wet himself, and then he passes about six ounces only. These cases are most troublesome at night, and afflict most men of over 60 or 65. Women are not exempt, as most old ladies say they have to get up at night two or three times. Cold, various beverages, such as tea and coffee, alcohol in all forms, but especially spirits, increase the discomfort. In the majority of cases I cannot find anything in the urine to account for the trouble.

I can find no help in treatment from the published textbooks; in fact, I cannot see anything new stated from what was taught half a century ago; therefore I appeal to specialists and fellow practitioners to aid me if they can.

I do not think the prostate has much to do with the trouble, otherwise why should females suffer? I inquired last week of an old patient who had had the prostate removed about ten years ago—a very successful operation, in so far that he can urinate freely and retain the urine about four hours in the daytime; but he informs me he has to get up to pass water two or three times a night.—I am, etc.,

London, S.W., March 20th. JAMES HAMILTON, M.B.

ANGIO-NEUROTIC OEDEMA.

SIR,—I have read with great interest Dr. Truman's communication on angio-neurotic oedema, published in the BRITISH MEDICAL JOURNAL of January 15th, 1921.

In the JOURNAL of April 3rd, 1915, to which Dr. Truman refers, I gave notes of two cases of the disease, in one of which I was the sufferer. I have not been able to follow up the other case, as the patient left British Honduras for England soon after my article was published. I have, however, heard that he suffered from repeated attacks of the complaint, and that he was strongly advised by the doctors in England not to return to the colony. He subsequently died in England, but I have not been able to ascertain the cause of his death.

My own case, which was a very severe and typical attack, I have no doubt whatsoever was brought about by several factors, all acting together and at the same time. For two weeks I was camping in the forest exposed to rain and sun, with insufficient and poor food, and subjected to innumerable bites from mosquitos, ticks, sand-flies, and a species of the Tabanidae family, whose bite was particularly bad, producing great local inflammatory swelling and oedema. The climax, however, was reached in my return journey when I passed a night in a "bush" house. Here I was at the mercy of thousands of bed-bugs, and these pests attacked me so fiercely and in such numbers that sleep was absolutely out of the question. A few days after my return to comfort and civilization I experienced my first and only attack of angio-neurotic oedema.

I most sincerely hope that Dr. Truman may be mistaken in his view that the disease always returns. My one and only attack was in the year 1913, and up to the present time I have been free. The disease is uncommon in the colony, and I have seen no other cases.—I am, etc.,

F. L. DAVIS, M.R.C.S.

Corozal, British Honduras, February 18th.

SPINA BIFIDA.

SIR,—Mr. Cokkinis, in your issue of March 12th, records an unusual case of myelocele, and in the concluding paragraph of his communication states that an exceptionally busy practitioner has had but two cases of spina bifida in thirty years.

In these circumstances it may be of interest to record that between November 19th, 1919, and February 25th, 1921, I have had 4 cases of spina bifida occurring in about 100 midwifery cases; 3 of them were born dead, the other lived for two months.—I am, etc.,

R. P. SMALLWOOD, M.B., B.Ch.Cantab.

Little Waltham, Chelmsford, March 14th.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Radcliffe Travelling Fellowship.—The Master and Fellows of University College announce that the Radcliffe Trustees have elected Tom Sydney Nelson, M.A., B.M., University College, to a Radcliffe Travelling Fellowship of £200 for three years.

Radcliffe Prize.—The Master and Fellows of University College have awarded a Radcliffe Prize of £50 to Edward Palmer Poulton, M.A., D.M., F.R.C.P., Balliol College, for his researches in Physiology and Pathology.

UNIVERSITY OF CAMBRIDGE.

THE degree of Doctor of Laws *honoris causa* will be conferred upon H.R.H. the Prince of Wales on May 31st.

The election to the Sir William Dunn Professorship of Biochemistry will be held on April 19th.

The General Board of Studies has recommended the appointment for five years of a University Lecturer in Physics as applied to Medical Radiology in connexion with the Special Board for Medicine.

At a congregation held on March 11th the following medical degrees were conferred:

M.D.—Geoffrey Evans, R. R. Walker.
M.B., B.CH.—E. P. Brockman.
M.B.—R. K. Merson.

Applications for the John Lucas Walker Studentship in Pathology must reach the Professor of Pathology, at the Pathological Laboratory, before April 5th.

UNIVERSITY OF LONDON.

The University of London Physiological Laboratory.

As announced last week, the Senate has reconsidered its decision of December 15th last to close the Physiological Laboratory of the University at the end of July. At the meeting of March 16th a resolution was adopted to continue the laboratory until the end of the current triennium—that is to say, until the end of 1923.

At a meeting on March 15th the Faculty of Medicine adopted two resolutions: the first stated the Faculty's opinion that the closure of the Physiological Laboratory, South Kensington, would be a grave injury to the advancement of science, and the second affirmed that it was highly desirable to continue the work of the Physiological Laboratory in its present situation on its pre-war condition until at least equivalent facilities can be provided elsewhere, as forming a valuable part of the work of the University.

QUEEN'S UNIVERSITY, BELFAST.

AT the graduation ceremony held on March 19th the following degrees were conferred:

M.D.—J. Donnelly, F. Hopkins.
M.B., B.CH., B.A.O.—*J. A. Smyth, †Eileen O. Bartley, †S. A. Thompson, J. Black, S. M. Bolton, J. W. Bradbury, Henrietta Bradshaw, P. P. Connolly, M. Emery, J. English, J. Gaussen, E. M. Hadden, H. Harris, S. M. Kirk, D. Loughridge, R. J. McMullan, B. McNeill, A. McSparran, E. C. Patterson, J. Patton, J. D. Reynolds, W. J. Simpson, A. C. Sinclair, Kathleen R. Snodgrass, J. Young.
D.P.H.—J. M. Clearkin, J. H. Davison, J. W. Kernohan, Olga R. I. Love, J. A. Martin, G. Patton, W. Saunderson, R. L. Sinclair, S. J. Stewart.

* First-class honours. † Second-class honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Nominations for Councillors.

MONDAY, March 21st, was the last day on which the names of candidates for the elections for members of Council on July 7th were to be received. No fewer than eleven nominations have been received. Of the four retiring candidates, Sir George Makins and Mr. Ernest Lane will not seek re-election. On the other hand, Mr. Waring, of St. Bartholomew's Hospital, Fellow 1891, Member 1890, and Mr. F. F. Burghard, C.B.,

Fellow 1889, Member 1886, will once more offer their services to the Council. The new applicants are: Mr. W. Thelwall Thomas, M.B.E., of Liverpool, Fellow 1890, Member 1886; Mr. A. H. Cheatle of King's College Hospital, Fellow 1892, Member 1888; Mr. J. H. Fisher, St. Thomas's, Fellow 1893, Member 1891; Mr. W. Turner, Westminster, Fellow 1895, Member 1893; Mr. C. H. Fagge, Guy's, Fellow 1898, Member 1896; Dr. Victor Bonney, Middlesex, Fellow 1899, Member 1896; Mr. L. Bathe Rawling, St. Bartholomew's, Fellow 1900, Member 1896; Mr. Donald J. Armour, C.M.G., West London Hospital, Fellow 1900, Member 1897; and Mr. Russell Howard, C.B.E., London Hospital, Member and Fellow in 1903.

Obituary.

WILLIAM IRONSIDE BRUCE, M.D.ABERD.,

Physician in Charge of the X-Ray Departments, Charing Cross Hospital and the Hospital for Sick Children.

WE regret to announce that Dr. William Ironside Bruce died at his residence in London on Monday, March 21st, after a severe and distressing illness of about two months' duration. His early death has cut short a career of good service and much usefulness, and his loss will be greatly felt by many members of the medical profession, and is especially lamented by Charing Cross Hospital and its Medical School.

William Ironside Bruce was the second son of the late Dr. William Bruce of Dingwall, and a nephew of Dr. J. Mitchell Bruce, Consulting Physician to Charing Cross Hospital. His mother, who survives, was a Miss Ironside, so that he was a cousin of Major-General Sir W. E. Ironside, now on service in Mesopotamia. His family had its origin in the upland Aberdeenshire parish of Keig, in the valley of the Don, which remained remote from outside influences till comparatively recently. The lads of promise passed from the parish schools of the district to the grammar schools in Aberdeen and to the University, and it is along this well-beaten road that men with names such as Bruce, Ironside, and Robertson Nicoll have proceeded to take their place in the nation's roll of honour.

William Ironside Bruce was born at Dingwall, and was educated at various schools in the north-east of Scotland. Entering the University of Aberdeen he obtained the degrees of M.B. and Ch.B. in 1900, and then he took service as civil surgeon in the South African Field Force. During his period of service he suffered from enteric fever, the consequences of which affected his health for some time. While in South Africa he took much interest in the early application of *x* rays for the diagnosis of war injuries. On his return to this country he obtained the diploma of Public Health, and proceeded to the degree of M.D. of his university. Shortly afterwards it became necessary to appoint an assistant to the late Sir J. Mackenzie Davidson at Charing Cross Hospital, and Ironside Bruce was selected for this post. He remained in the service of Charing Cross Hospital to the time of his death, and gradually built up an exceedingly complete and efficient *x*-ray department in the hospital.

Ironside Bruce was intensely interested in his work, in the scientific developments of his subject, and especially in its practical application to the diagnosis and treatment of disease. The whole of his later work was built on a good foundation, as is evidenced by the publication in the early part of his career of his *System of Radiography with Atlas of the Normal*. He was a good teacher, and many now engaged in the practice of radiography owe much to his instruction. Perhaps Ironside Bruce's strongest point was his desire to be of service to his professional brethren in their practice. With a very complete knowledge of his subject he had a sound and increasing acquaintance with general medicine and surgery. Anyone who had the opportunity of consulting him, either in hospital or in private practice, gained not only such knowledge as was possible by radiographic means but much sound information both as to diagnosis and treatment. In this peculiar relationship Bruce's work was of the greatest value to all his friends. In process of time he became President of the Section of Radiology in the Royal Society of Medicine, and took much interest in the establishment of the special diploma in this subject, now given by the University of Cambridge. It is only a fortnight ago that we announced his appointment to be President of the Section of Radiology and Electro-therapeutics at the forthcoming Annual Meeting of the British Medical Association at Newcastle.

For some months his colleagues had been unhappy as to the condition of his health, but his energy would not be restrained. At the beginning of the year, however, he was persuaded to stop work and take a prolonged holiday. Shortly it was found that his illness was serious. Blood examination established the diagnosis of the severest type of aplastic anaemia, and from this disease he died. The evidence now accumulating that this condition can be caused by the effects produced on the blood-forming structures of the body by the more penetrating radiations both from *x*-ray tubes and from radium renders it almost certain that he succumbed as the result of his continuous and enthusiastic work in the subject of his choice.

THE LATE CAPTAIN E. R. ARMSTRONG.—Major-General Sir Patrick Hehir, I.M.S. (ret.), writes: I should deem it a privilege to be allowed to add a few remarks to those made in the issue of the BRITISH MEDICAL JOURNAL of March 19th, 1921, regarding the late Captain Edward Randolph Armstrong, I.M.S., whose untimely death has deprived the Indian Medical Service of one of its most brilliant and capable officers. I knew him chiefly at Army Headquarters in India, where he was attached to the D.M.S.'s office, and did most excellent work during the war. He was very loyal to his friends and those with whom he was officially connected. He had a lovable disposition, and I personally greatly enjoyed and benefited by his friendship. It was a source of pleasure to him to be of service to others. He was very hard working, and got through an extraordinary amount of work with exceptional ease. Nothing seemed to deprive him of his calm, quiet, and unruffled demeanour; he appeared to grasp intuitively the main points of any subject he was dealing with; one looked upon his power of penetration as a remarkable gift, and found him a quick and sound thinker and rapid worker. I was principally brought into contact with him in sanitary matters, and found that he had a natural talent to get down to the first principles of questions arising and apply the remedy. He was a good mathematician. One expected him to go far, but there was always doubt as to his being able to stand the strain of the high pressure at which he worked. One of his greatest griefs was that his state of health precluded his selection for field service during the great war.

Medical News.

AT the meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine on Monday, April 4th, at 8.30 p.m., papers on malaria will be read by Dr. W. Broughton-Alcock and Dr. H. C. Lucey.

THE Tuberculosis Society proposes to arrange a post-graduate course in Paris towards the end of May if a sufficient number of applications are received by Dr. W. G. Dickenson, 1, Ridley Villas, Newcastle-on-Tyne.

A SERIES of meetings for graduates, with demonstration of cases, will be held by Dr. Dingwall Fordyce in Ward 4, the Royal Liverpool Children's Hospital, Myrtle Street, at 10 a.m. on the following Saturdays: April 2nd, baby feeding and the prevention of disease; May 7th, indigestion in infancy, the wasting baby; June 4th, diet of older children, indigestion; July 2nd, dietetic treatment in illness.

AT the meeting of the Harveian Society held at the Paddington Town Hall on March 17th the Harveian Lecture was delivered by Dr. Leonard Williams on "The thymus gland in everyday life." At the close of the lecture a vote of thanks was proposed by Dr. Willcox and seconded by Dr. Wilson.

A VERY successful reunion dinner of No. 14 General Hospital, B.E.F. (Wimereux), was held on March 16th at the V.A.D. Ladies' Club, 28, Cavendish Square. Lieut.-General Sir John Goodwin, D.G.A.M.S., a former commanding officer of the hospital, was in the chair, and proposed the only toast, "Absent Friends." Apologies for absence were read from Colonel R. J. C. Thompson, Major Colin Mackenzie, and others, and a message was sent from the reunion to Miss Fox, matron during the greater part of the hospital's existence, who was now abroad. Among those present at the large gathering were Miss Barrett, R.R.C., Miss Morris, R.R.C., and other former nursing sisters; Lady Elizabeth Keppel, the Hon. Cecilia Lawley, Miss Sloggett, and many other former members of

the V.A.D. detachment; and Lord Dawson of Penn, Colonel A. Webb-Johnson, Colonel Francis Steward, Major Hugh Thursfield, Captain Sir Joseph Skevington, Captain Ridley Mackenzie, and other former medical officers.

THE twenty-fifth anniversary of the day on which Professor Röntgen made his first communication on the discovery of *x* rays to the Würzburg Medical Society was recently celebrated at the Physical Institute of Würzburg University.

THE personal estate in the United Kingdom of Lieut.-General Sir William Babtie, V.C., K.C.B., K.C.M.G., was £6,807.

TWO supplementary volumes of Keen's *Surgery*, which have been in preparation since the armistice, will shortly be published by Messrs. W. B. Saunders. The first six volumes recorded the progress of surgery down to 1913; the two new volumes bring it down to 1921.

THE annual meeting of the Société française d'oto-rhino-laryngologie will be held in Paris at the Hôtel des Sciences Savantes, 8, Rue Danton, on May 9th, 1921.

THE International Congress on the History of Medicine will be held in Paris at the Faculty of Medicine from July 1st to 5th, 1921. In connexion with the Congress, a historical exhibition is being organized. Communications should be addressed to the Secretary, Dr. Laignel-Lavastine, 10, Place de Laborde, Paris.

IN January 7 cases of rabies occurred in Holland—6 in the province of Groningen and 1 in the province of Drenthe.

THE fifth Sicilian Medical Congress, consisting of three sections devoted to medicine, surgery, and professional interests respectively, will be held next month at Palermo.

THE forty-fifth meeting of the German Society of Surgery will be held in the Langenbeck-Virchow House, Berlin, from March 30th to April 2nd.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London:* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

"J. T." asks for light on the nature of the aches commonly called rheumatism, chronic rheumatism, or muscular rheumatism, and often associated with a coming change in the weather.

PROLONGED ADMINISTRATION OF ARSENIC.

"L. H." asks whether there is any rule guiding the long administration of arsenic. Could the drug be safely given fairly regularly over a period of three years in a case of psoriasis, which it greatly benefits?

INCOME-TAX.

"N. R. W.," who contemplates retiring to England from the Colonies, inquires what tax he would pay on "a private income of over £2,000"?

*** Our correspondent would pay as income tax nothing on £135 (or on £225 if married), 3s. on £225 and 6s. on the remainder—less appreciable allowances for children under 16 years of age and for payment of life assurance premiums. He would also be liable to pay supertax at 1s. 6d. in the £ on the excess of his income over £2,000.

"G. P." intends to relinquish his practice, owing to illness and to commence a small consulting practice in the neighbourhood. He asks, "If the expenses exceeded the gross earnings, could the loss be set against the private income?"

*** Yes; but if that is done the amount of the loss cannot be carried forward as a minus quantity for the average of future years. We may add that "G. P." might anticipate some difficulty with the authorities over his expenses—for example, the total cost of car and chauffeur might be objected to if infrequently used for the practice.

"ANOTHER R.M.O." receives "a salary of £350 *plus* £150 in lieu of board and lodging." He asks if the £150 is assessable.

*** Yes—as our correspondent does not receive "in kind" but in cash. The principle is that something received for services rendered is assessable if it is money or something capable of being converted into money.

"A. K." pays interest on a bank overdraft. He asks whether he can deduct the amount in arriving at his total income.

*** In our opinion, yes, provided of course that the amount has not been treated as a professional expense, in which case the deduction has already been effected in that the amount assessable has been reduced. Perhaps our correspondent can induce the inspector of taxes to quote the precise section of the 1920-21 Finance Act on which he relies for support in refusing the claim; we cannot identify it.

LETTERS, NOTES, ETC.

ADRENALINE IN RESUSCITATION.

DR. A. E. YOUNG (Kuruman, Bechuanaland) writes: I read with interest Mr. J. P. Lockhart-Mummery's note in your issue of January 15th, p. 100, on adrenaline in resuscitation. It has left me rather confused, as I have been taught that adrenaline with chloroform forms a poisonous compound which is liable to cause—and has caused—fatalities, and that its use during or just after chloroform anaesthesia is contra-indicated. I should be glad to learn from any of your readers whether the facts are as I have stated, or that I am under a misapprehension.

A THREE-WHEELED RUNABOUT.

THE Cambro monocar is a runabout produced by the Central Aircraft Company (60, Chancery Lane, W.C.2) with a view to combining the comfort and protection from weather of a three-wheeled car with the simplicity and economy of a motor tricycle. The body is something of the nature of a large side-car, with a hood and a small glass screen. Behind the body and above the driving wheel is a 2 h.p. horizontal engine with twin opposed cylinders. The transmission is direct from the engine through a counter-shaft to the back wheel by chains. The engine is started by means of a foot lever. The system of springing used on the machine is new, rubber cords as in aeroplanes being utilized for absorbing road shocks. Several of these monocars are stated to have travelled over 6,000 miles; it is said that they will average sixteen miles an hour, can do twenty-six when required, will climb any ordinary hill, and will run 100 miles on a gallon of petrol. It would seem that the Cambro monocar, like a motor scooter, might prove useful as an additional mode of locomotion in some rural and suburban practices. It is as cheap as a motor cycle, and affords a great deal more protection from weather.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 36, and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32 and 33.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.